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**THE AMERICAN
YEAR BOOK**

THE AMERICAN YEAR BOOK

A Record of Events and Progress
YEAR 1936

EDITOR

WILLIAM M. SCHUYLER

GENERAL EDITOR

ALBERT BUSHNELL HART, LL.D.

EDITED WITH THE COÖPERATION OF
A SUPERVISORY BOARD REPRESENT-
ING NATIONAL LEARNED SOCIETIES

NEW YORK

THOMAS NELSON & SONS

1937
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YEAR 1936

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GENERAL EDITOR
ALBERT RUSSELL HART, LL.D.

EDITED WITH THE COOPERATION OF
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OF THE NATIONAL LEARNED SOCIETIES

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PREFACE

This volume of *THE AMERICAN YEAR BOOK* is the twenty-second of the series. It is offered to the reading public as a political and economic, social and cultural compendium of American life in the year 1936, the year which undoubtedly will be set down in chronicled history as marking definite recovery from the great depression of the Nineteen Thirties. The revival of normal energy, confidence and hope is manifested in every field of activity, and the Year Book presents the significant record in authoritative, compact and convenient form for the advantage of every class and type of reader, research worker, student and general seeker for information.

The Editors have consistently sought to create an interpretive picture of events and achievements and range of thought in the United States and in the regions under the influence of this country. They have also gone sufficiently far afield to put into the record the affairs of foreign countries wherever those affairs have had a bearing on America's international concerns. So broad a theme has necessarily imposed a highly selective limitation as to scope of treatment. An effort by way of compensation to that class of readers which seeks fuller information has been made by the inclusion, at the end of each major topical division, of a list of organizations and learned societies cognate to the subject of a given division, to which application may be made in the prosecution of extended study and research.

In stating more specifically the purposes to which *THE AMERICAN YEAR BOOK* has been dedicated since its first beginnings in 1910, the Editors feel they cannot do better than repeat what was said in this place a year ago, that the book is designed to promote the pursuance of study and research in all significant activities of the day; to present a portrayal of life in the United States for the information of the layman; to reduce to measurable terms the mass of daily news developments and to provide a convenient repository for the substance of such records; to stimulate pride and interest in America and American affairs, and to appraise America's relations to the rest of the world. In addition to the narrative articles, the book presents extensive chronological tabulations of financial and economic affairs and of national and international political and social events. Statistical material is more freely supplied than formerly. A complete index is provided as a key to the whole.

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**THE AMERICAN
YEAR BOOK**

THE AMERICAN YEAR BOOK

A RECORD OF EVENTS AND PROGRESS

PART ONE HISTORICAL

DIVISION I AMERICAN POLITICAL HISTORY

PRESIDENTIAL CAMPAIGN AND ELECTION

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CONVENTION PREPARATIONS

The opening gun in the 1936 presidential campaign was fired when Chairman Henry P. Fletcher of the Republican National Committee called a meeting for Dec. 16, 1935 to decide the time and place of the Republican National Convention. At this meeting the committee selected Cleveland as the convention city and set June 9 as the opening date. The Democratic National Committee, meeting Jan. 9 at the call of Chairman James A. Farley, decided that the Democratic National Convention should convene in Philadelphia June 23. Apportionment of Democratic delegates was agreed to, involving a cut to 1,100 from the 1,152 total of 1932. Chairman Farley predicted that the campaign would be "the bitterest and certainly the dirtiest political struggle that any of us here can remember."

The choice of delegates to the national conventions was made in three different ways. (1) In 15 States both parties elected their delegates in uniform primaries. The dates of these

primaries ranged from March 10 in New Hampshire to June 2 in Florida. In addition a Republican primary was held in Maryland. (2) In other States delegates chosen in various ways met in state conventions and selected delegates. (3) In still other States convention delegates were named by the state committees without consulting the voters. Most of the delegates were sent uninstructed, but it was possible to note definite trends toward certain candidates as the various delegations were chosen.

DEMOCRATIC PRE-CONVENTION ACTIVITIES

Although it was apparent from the beginning that President Roosevelt and Vice-President Garner would again be the standard bearers of the Democratic Party, there were early evidences of defections from the Democratic ranks. Former Governor Alfred E. Smith of New York, in an address at the Liberty League dinner in Washington Jan. 25, declared that when the forthcoming Democratic National Convention en-

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dorsed the record of the New Deal administration, all true Jackson and Cleveland Democrats could "either take on the mantle of hypocrisy or we can take a walk, and we will probably do the latter." On Jan. 29 a "Grass Roots Convention" was held at Macon, Georgia. It was addressed by Governor Eugene Talmadge of Georgia, outspoken critic of President Roosevelt. The convention asked Governor Talmadge to run for the presidency on a platform which charged that the Democratic platform of 1932 had been completely disregarded. Opposition to the President was expressed on the grounds of his friendly attitude toward Negroes, his policy of centralization of power at the expense of states' rights, and his agricultural program. While attended by delegates from a number of southern and border States, this convention was composed in most part of Georgia followers of Governor Talmadge. It was later disclosed in hearings at Washington that the convention was largely financed by individual members of the Liberty League. This "Grass Roots" movement gathered little political strength, and Governor Talmadge's state organization was defeated in its attempt to control the convention delegates from Georgia. A test of President Roosevelt's strength was involved in the entrance of Colonel Henry Breckinridge in preferential primaries in Pennsylvania and Maryland. The protest vote against New Deal policies in Maryland was sufficiently large to cause considerable comment, but the primaries in Pennsylvania and Maryland proved that the President's popularity had not waned.

Because of the national prominence of the men participating, a letter written by former Secretary of War Newton D. Baker, Lewis D. Douglas, Director of the Budget in the early days of the Roosevelt Administration, and Leo Nolman, well-known economist, which was published in *The New York Times* June 3, attracted much attention in political circles. These three men suggested that the Democratic platform should

call for the gradual withdrawal of the immunities and privileges on which monopoly depended and that business should be regulated not by government fiat but by free bargaining in open markets. They urged a plank that would take from appointed officials the power to make laws to govern the rights and duties of individuals, and return this power to the States, with intervention by the Federal Government only in the event of exceptional need. They also suggested restoration of responsible government finance through the reduction of expenses and the replacement of indirect and invisible taxes with direct taxes levied in accordance with the ability to pay. Democratic leaders, however, expressed the opinion that these suggestions would receive little attention at the Democratic Convention. The platform, according to them, would be written by friends of the President and would not, even in part, be dictated by his critics.

On the eve of the Democratic Convention, five leading anti-Roosevelt Democrats—Alfred E. Smith, Bainbridge Colby, James A. Reed, Joseph B. Ely, and Daniel F. Cohalan—addressed an appeal to the delegates to return to the historic principles of the party and to nominate a candidate who as President "will remain within his own sphere of jurisdiction and not make the Congress into a rubber stamp or try to intimidate the judiciary into an endorsement of his efforts to turn our Republic into a dictatorship on the European model or an Asiatic absolutism." In the event that this anti-Roosevelt drive should fail, "then patriotic voters of all parties will know unhesitatingly to what standard they must rally in order to preserve the America of the great leaders of the past," a thinly-veiled threat to bolt the party and support the Republican ticket.

REPUBLICAN PRE-CONVENTION ACTIVITIES

The situation in the Republican Party was altogether different from that among the Democrats. The field

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was open and a number of potential candidates were pushed forward by their political supporters. The first officially to announce his candidacy for the Republican nomination was Senator William E. Borah of Idaho, who did so by the publication of a statement that in the Ohio primary he would place in the field eight candidates for election as delegates at large to the Republican National Convention. His purpose was to forestall Old Guard Republican leaders who sought to control the convention through delegations pledged to favorite-son candidates from the large States. Other names mentioned frequently were those of Governor Alfred M. Landon, Senator Arthur Vandenberg of Michigan, Colonel Frank Knox of Illinois, Senator L. J. Dickinson of Iowa and former President Herbert Hoover. Several favorite-son candidates received support in their respective States but none was regarded as a serious contender for the nomination.

The selection of the Republican candidate was influenced greatly by the political set-up in the United States, resulting from the Democratic landslides of 1932 and 1934. The President's strength in the South and the Pacific Coast States was unquestioned. In order to win the election the Republicans must carry the Middle West and the Northeast. Governor Landon was one of the few Republicans who had been elected despite the Roosevelt victories and, moreover, he was located in the center of the farm belt and would therefore make a strong appeal to the farm vote. He was praised as a governor who had balanced the budget of his State and was presented to the eastern business wing of the Republicans as an embodiment of caution and economy. Geographically and economically, Governor Landon had a decided advantage over the other Republican possibilities, and these qualifications, combined with carefully planned newspaper publicity, soon placed him in such a strategic position that his nomination seemed assured unless a "stop Landon" combination could be formed. Danger

of the formation of such a combination was lessened when, on May 18, Mr. Hoover withdrew himself from the race with the statement: "It should be evident that I am not a candidate. . . . My concern is with principles." Senator Borah, whose attempt to secure the support of the Ohio delegates to the Republican convention was defeated by Robert A. Taft, favorite-son candidate, accused his rivals of arousing the Negro vote against him because he had opposed the anti-lynching bill in Congress. Fear that Senator Borah might bolt the party caused much misgiving on account of his popularity in the Far West. All hope of an anti-Landon bloc disappeared when, on the eve of the Republican Convention, Senator Borah declared that he would not join any combination at any time during the convention on the question of candidates.

THE REPUBLICAN CONVENTION

The two first days of the Republican Convention were devoted to the usual preliminary activities prior to the adoption of the platform and the nomination of candidates for President and Vice-President. Senator Frederick Steiwer of Oregon, temporary chairman, delivered his keynote speech at the evening session of the opening day, June 9. Following the time-honored custom, Senator Steiwer severely criticized the New Deal for its heavy spending of public money. In his remark that "for three long years we have had a Government without political morality," he presented a phrase, "three long years," which was quickly caught by the crowd and sung to the tune of "Three Blind Mice." For a time it threatened to rival "Oh, Susannah" as the theme-song of the campaign. The second blast of criticism of the Roosevelt Administration was delivered at the morning session of the second day by Congressman Bertrand H. Snell of New York, permanent chairman of the convention. Mr. Snell promised that the convention would nominate a man who would lead "a crusade to restore to the American people their Constitution

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and their liberties." But it remained for former President Herbert Hoover, who appeared as a guest speaker, to stir the crowd to wild enthusiasm with his attack on the New Deal. Tremendous applause greeted him when he rose to speak and even a greater demonstration marked the close of his address. Mr. Hoover's thesis was that fundamental American liberties were at stake in the election and he warned the delegates that they must not permit expediency to turn them from what was in reality "a holy crusade for liberty which shall determine the perpetuity of a nation of free men."

For three days the resolutions committee struggled over the provisions of the platform, attempting to harmonize the conflicting interests of the conservative and liberal wings of the party, and at the same time to satisfy the demands of Senator Borah on currency, monopoly and foreign relations. Finally the necessary compromises were effected and the platform was adopted by the convention without dissent from the floor. Accusing the New Deal administration of waste and extravagance, the platform pledged the Republicans to stop uncontrolled spending, to balance the budget, and to revise the Federal tax system. Expressing its support of social security, it advocated a pay-as-you-go policy based on a system of Federal aid to the States. Federal grants-in-aid to States and territories were also advocated for relief activities, such relief to be administered by non-partisan local agencies familiar with community problems. For agriculture, the Republicans favored production on the basis of abundance instead of scarcity; national land-use and conservation of soils; prohibition of all imports on live-stock, dairy and agricultural products and substitutes; payment to farmers of the tariff equivalent on the domestically consumed portions of the export crops; and crop insurance and financial assistance for the purchase or refinancing of farm homes. The platform called for the repeal of the reciprocal trade agreement law and the resto-

ration of the principle of the flexible tariff. It pledged the employment of the full powers of the Government to end monopolies and to restore free enterprise; also to resist all attempts to impair the authority of the Supreme Court. In foreign affairs, the Republicans went on record in opposition to membership in the League of Nations or in the World Court. Certain interpretations of the platform were made by Governor Landon in a message read by John D. M. Hamilton before he nominated Mr. Landon for the presidency. While supporting the platform plank concerning the labor of women and children, Governor Landon said that if proper protection could not be obtained within the Constitution, he would favor a constitutional amendment permitting States to adopt such legislation as might be necessary. With respect to the plank on the currency, he said he favored a return to the gold standard but not until it could be done "without penalizing our democratic economy and without injury to our producers of agricultural products and other raw materials." His third comment was on the merit system, which he held should include "every position in the administrative service below the rank of assistant secretaries of major departments and agencies," including the Post Office Department.

Caucuses of state delegations at Cleveland indicated clearly that Governor Landon would be nominated on the first ballot. Such being the case, a movement was set on foot to make the choice unanimous. Following the nomination of Governor Landon by John D. M. Hamilton and the usual seconding speeches, five rival candidates—Senator Arthur Vandenberg of Michigan, Colonel Frank Knox of Illinois, Senator L. J. Dickinson of Iowa, Governor Harry W. Nice of Maryland, and Robert A. Taft of Ohio—withdrawed their candidacies, released their delegates, and joined in seconding the Landon nomination. Senator Borah had already left the convention and did not participate in this harmony movement. Convention sentiment favored Sena-

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tor Vandenberg as Landon's running mate, but when the Senator withdrew his name from consideration, Colonel Knox was nominated.

THE DEMOCRATIC CONVENTION

Postmaster General James A. Farley, National Chairman, called the Democratic Convention to order at noon on June 23 in Philadelphia. He announced that the issue in the forthcoming campaign was whether the New Deal should be continued. He asserted that the Republican National Convention, in adopting a meaningless platform and in nominating Governor Landon for President, had sought to dodge the real issue. He accused the Republicans of appealing at the same time for the support of the liberals in the West and the conservatives in the East. At the evening session, Senator Alben W. Barkley of Kentucky, who had been elected temporary chairman at the morning session, delivered the keynote address. He outlined the contrasting party records as he saw them and predicted the President's re-election on the basis of his achievements and other efforts. After a routine session on the morning of the second day, the convention assembled again in the evening and elected Senator Joseph T. Robinson of Arkansas as permanent chairman. Senator Robinson devoted the major portion of a long address to the Republican platform, emphasizing its compromises and the differences between it and the interpretations of it by Governor Landon; to a defense of the Administration's relief expenditures, and to the attitude of the New Deal toward the Supreme Court. With respect to the latter point, Senator Robinson said that, although certain decisions of the Supreme Court had slowed up national recovery, the Administration would abide by these decisions "until reversed."

One of the most significant acts of the Democratic Convention was the abrogation of the century-old two-thirds rule and the substitution of the majority rule for the nomination of President and Vice-President. The

rules committee of the Convention, with the support of Administration influences, succeeded in overcoming southern opposition to the change, and at the same time avoided a fight on the floor of the convention by adopting the following compromise resolution sponsored by Senator Tydings of Maryland: "Be it resolved that the Democratic National Committee is hereby instructed to formulate and recommend to the next national convention a plan for improving the system by which delegates and alternates to Democratic National Conventions are apportioned, and be it further resolved that in formulating this plan the national committee shall take into account the Democratic strength within each State, the District of Columbia, Territories, etc., in making the apportionments." For 50 years Democratic leaders have regarded the discarded two-thirds rule as undemocratic and dangerous. Delegates from the Solid South, however, have contended that the rule was necessary to protect their interests and prevent the nomination of candidates objectionable to the South. With President Roosevelt's renomination an assured fact, the 1936 convention had the first real opportunity to end the rule without injury to any group of States or presidential candidates.

Since there was no struggle in the Democratic Convention over the selection of candidates, the chief interest centered on the platform. The completed document was submitted by a unanimous committee on resolutions and was unanimously adopted by the convention. This unanimity was due principally to the fact that Senator Robert Wagner of New York, chairman of the committee, kept in constant touch with President Roosevelt during the meetings of the committee, and all changes in the preliminary draft had the approval of the President before being adopted by the committee. The platform was general in treatment, divided into subjects rather than planks. Certain omissions were noticeable, such as mention of the platform pledges of 1932, the Silver Purchase Act, the

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World Court, the League of Nations, the NRA, and the AAA. The principal declarations of the platform related to the following subjects: Foreign Affairs—A continuation of the good neighbor policy; opposition to war as a national policy; a pledge of peaceful means for the settlement of disputes; a strong defense against aggression; constant labor for world peace; the removal of private profits from the conduct of war; guarding against political commitments, international banking or private trading interest, which might draw the nation into war. Finance—A sound currency stabilized to prevent wide fluctuations in value, as a permanent objective; a claim that deflation had been stopped, values restored, government credit raised and interest rates of public loans lowered; a promise through retrenchment and tax programs to balance the budget and reduce the national debt at the earliest possible moment. Farm Relief—Pledges to farmers have been kept; the farmer's indebtedness has been reduced and his net income doubled; electrification and good roads to be extended; soil conservation to be sought and the domestic allotment plan with bounties to be continued in conjunction with financial plans to improve the condition of farm tenants; production to be balanced with demand at a fair price to the farmer and to the consumer; encouragement of farm cooperatives; and promotion of the plan to retire submarginal land. Labor Policy—Claiming that the Roosevelt Administration had shortened hours of labor, increased pay, ended sweatshop toil of women and children, encouraged collective bargaining and provided Federal authority to settle disputes, the platform promising to extend these benefits to workers in the natural resource industries. Utilities—The yard-stick method fostered by TVA and other government authorities by which cheaper electricity has been made available will be continued, and rural electrification developed. Unemployment and Old Age—On the foundation of the Social Security Act a structure of economic

security will be erected "making sure that this benefit shall keep step with the ever-increasing capacity of America to provide a high standard of living for all its citizens." Monopoly—"We pledge vigorously and fearlessly to enforce the criminal and civil provisions of the existing Anti-Trust Laws." Constitution—Many national problems cannot be settled by state action. An attempt will be made to meet these problems through legislation within the Constitution but if this proves to be impossible, "we shall seek such clarifying amendment as will assure to the legislatures of the several States and the Congress of the United States, each within its proper jurisdiction, the power to enact those laws which the state and Federal legislatures, within their respective spheres, shall find necessary, in order adequately to regulate commerce, protect public health and safety and safeguard economic security."

Friday, June 26, was devoted to the nomination of President Roosevelt for re-election. The President's name was formally proposed by John E. Mack. One of the seconders, Governor Herbert H. Lehman of New York, received a tremendous ovation, due partly to his popularity but largely to the concerted effort to influence him to withdraw his announcement that he would not run again for the governorship of New York. It was felt that his candidacy in New York would go far toward swinging that State for Roosevelt. After numerous seconding speeches, President Roosevelt was nominated by acclamation, as was Vice-President Garner on the following day. The nominating procedure was brought to a dramatic climax on June 27 when 80,000 people crowded into Franklin Field at Philadelphia to witness President Roosevelt's acceptance of the nomination. Speaking on a high moral plane, the President asserted that "this generation of Americans has a rendezvous with destiny." Contrasting conditions in this country and abroad, he declared that here

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in America we were waging a great war, not alone against want and destitution and economic demoralization but a war for the survival of democracy.

UNION PARTY CONVENTION

On June 19, Representative William Lemke of North Dakota announced his presidential candidacy on the ticket of the new Union Party of the United States. Thomas Charles O'Brien of Boston was designated as his running mate. A 15-plank platform was issued advocating that Congress alone should coin and issue the coin and regulate the value of all the money and credit in the United States through a central bank of issue; the retirement of all Federal interest-bearing obligations and the refinancing of all farm and home mortgages by the use of the Government's "money and credit"; a limitation on the size of individual incomes and inheritances, and the control and decentralization of monopolies. Lemke's candidacy was immediately endorsed by the Reverend Father Charles E. Coughlin of Royal Oak, Mich., in a nation-wide radio broadcast. Since Father Coughlin was the head of the National Union for Social Justice it was understood that his endorsement meant the support of Lemke by that organization. This proved to be the case for at its convention in Cleveland Aug. 15, the National Union for Social Justice, by a vote of 8,153 to 1, voted to support Lemke and O'Brien, but at the same time refused to endorse the Union party or its platform. Instead, the convention adopted a platform of its own. This platform affirmed the National Union's faith in the Constitution, with its checks and balances and reservations of powers to the sovereign States; denounced executive attempts under the New Deal to usurp powers of Congress; protested against violation of constitutional provisions giving Congress the right to coin money and regulate the currency; condemned child labor, and went on record for labor's right to organize.

SOCIALIST CONVENTION

The Socialist Party, at its convention held at Cleveland during the last week in May, named Norman Thomas as its candidate for President, and George A. Nelson of Milltown, Wis., farmer and former Speaker of the Wisconsin legislature, for the Vice-Presidency. The nomination of Mr. Thomas was unanimous since there were no other candidates. This was the third successive time that he was chosen as the Socialist presidential candidate. The Socialist platform called upon workers and farmers to unite against both the capitalistic "Old Deal" and "New Deal" in the fight for improved social conditions. Declaring that in Socialism alone would a solution of the national problem be found, the Socialist Party pledged itself "to the task of building a Socialistic society, under which the industries of the country shall be socially owned and democratically managed for the common good." It demanded that the Constitution be adapted to the needs of the times and that the Supreme Court be deprived of the power to declare social legislation unconstitutional. It proposed the social ownership and democratic control of mines, railroads, power industry and other key industries; right of collective bargaining; appropriation of \$6,000,000,000 to continue Federal relief to the unemployed for the next year; Federal system of unemployment and old-age pensions; socialized medicine; Federal appropriations for the establishment and maintenance of public schools and of free city colleges to make possible a full education for all young persons; drastic increase in income and inheritance taxes on the higher income levels and of excess profit taxes; establishment of the 30-hour week; abolition of tenant and corporation farming; stabilization of farm prices at the cost of production; crop insurance; drastic reduction of armament with a view to total disarmament and unconditional opposition to any war engaged in by the American Government.

COMMUNIST CONVENTION

Earl Browder, general secretary of the Communist Party of the United States, and James W. Ford, Negro leader from Harlem, were nominated by acclamation on June 28 for President and Vice-President, at the final session of the national Communist convention held at Madison Square Garden, New York. After assailing the policies of the other parties, major and minor, the platform of the Communist Party called for the enactment of the Frazier-Lundeen Social Security Bill; curtailment of the power of the Supreme Court; sharply graduated taxation upon incomes in excess of \$5,000 a year; extension of WPA; the thirty-hour week; increased educational and occupational opportunities for the youth of the nation; freeing of the farmers from debts, unbearable taxation and foreclosures; death penalty for lynching; imprisonment of employers guilty of discharging workers for union or political activities, and full and equal rights for Negroes.

GOVERNOR LANDON IN THE CAMPAIGN

In response to a direct request from Governor Landon, the Republican National Committee named John D. M. Hamilton of Kansas as its chairman. The selection resulted from Mr. Hamilton's successful conduct of the pre-convention campaign for Governor Landon which culminated in his choice as the Republican standard bearer. Postmaster General James A. Farley was continued as chairman of the Democratic National Committee, but on July 7, President Roosevelt granted him a payless leave of absence from the Postoffice Department until after the election, thus permitting him to devote his entire time to the direction of the presidential campaign. Although the campaign was noteworthy for the wide use of the radio, neither of the major parties overlooked the value of direct personal appeal to the voters. Both President Roosevelt and Governor Landon traveled extensively during the campaign and made numerous speeches. The same was true of

Colonel Knox, the Republican candidate for the Vice-Presidency. Vice-President Garner alone refrained from active campaigning.

The Republicans were first in the field. On July 23, Bertrand H. Snell and a delegation of Republicans went to Topeka to notify Governor Landon formally of his nomination. On the south steps of the Kansas State House, the Governor accepted the nomination in the presence of a crowd of more than 50,000 persons, pledging his complete adherence to the Republican party platform. His first eastern speaking tour was begun Aug. 20. The immediate objective was his birthplace, West Middlesex, Penn. Addresses were made at Chautauqua and Buffalo before he returned to Kansas. A second trip eastward carried Governor Landon to Portland, where on Sept. 12, he predicted a Republican victory in Maine and in the nation. Returning again to his home, the Governor then delivered addresses in Des Moines and Milwaukee, followed by appearances in Cleveland, Detroit, Grand Rapids and Indianapolis. The turning of Dr. Francis Townsend against President Roosevelt and Republican hopes that California might be carried with the aid of the Townsend supporters caused Governor Landon to make a sudden dash to Los Angeles. On this trip he also took occasion to speak in New Mexico and Oklahoma. His last drive carried him eastward again to Indianapolis, Philadelphia, Baltimore, Pittsburgh, Newark, New York, Charleston, West Virginia, and St. Louis. His final radio appeal was made from Topeka Nov. 2. In his speeches Governor Landon criticized the extravagance of the Roosevelt Administration and promised to balance the budget. He also criticized planned economy and the centralization of power in the national government at the expense of the States. He maintained that the reciprocal tariff pacts had retarded rather than aided recovery. He repeated the pledge of the Republican platform to provide in the case of exportable surpluses of agricultural products, the payment of reasonable

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benefits upon the domestically consumed portion of such crops in order to make the tariff effective. He went on record in favor of crop insurance and a Federal-state plan of soil conservation. While favoring old-age pensions, he denounced the Social Security Act.

PRESIDENT ROOSEVELT IN THE CAMPAIGN

Although earlier he made a number of speeches which, while termed "non-political," nevertheless were regarded as political by his opponents, President Roosevelt began active campaigning Sept. 29 at Syracuse where he addressed the New York State Democratic Convention. In this address he denied that his policies were radical and he repudiated the support of any communist. Two days later, before a large crowd gathered at Forbes Field in Pittsburgh, he defended his use of billions for relief and predicted that rising prosperity would pay off the national debt. Swinging westward, he spoke in St. Paul, Omaha, Denver, Kansas City, Wichita, Chicago, St. Louis, Detroit, and Cleveland, emphasizing the gains made in agriculture and manufacturing since the beginning of his Administration. New England next occupied his attention and speeches were made in Worcester, Mass. and Hartford, Conn. His final drive was made in Pennsylvania, Delaware and New York, with speeches at Wilkes-Barre, Harrisburg, Camden, Wilmington, and in the Brooklyn Academy of Music and Madison Square Garden. On the night before the election, the President spoke over a nation-wide radio hook-up. In all of these speeches the President's central theme was a review of the laws passed which he claimed had put the people of the nation once more on the road to prosperity. He challenged anyone to show that he was not better off in 1936 than in 1933.

CAMPAIGN TACTICS AND ARGUMENTS

According to Charles Michelson, Publicity Director of the Democratic National Committee, the strategy of his department was to prevent the

Republicans from building up their candidate as an inspiring figure. Their plan was to keep before the people, as the one issue, the relative fitness of President Roosevelt and Governor Landon to handle the important national and international questions which must be faced by the President. Emphasis was therefore placed on the inexperience of Governor Landon. The Democratic Publicity Committee refused to be drawn into controversies over Farley, Tugwell, or communism. President Roosevelt's prestige and his exceptional radio voice insured him larger audiences than his opposing speakers could hope to get. These factors, in addition to Democratic control of most of the state governments and a well-directed national organization, more than offset any efforts of the Republicans. As minor parts of the Democratic strategy, Governor Lehman of New York, who had declared his intention to retire from politics, was persuaded to run again for the governorship of New York, and Frank Murphy, High Commissioner to the Philippine Islands, was drafted as the Democratic candidate for governor in Michigan. In each instance it was hoped that the personal popularity and vote-getting ability of these men would assist materially in carrying their respective States for the Democrats.

On the other hand, anti-New Deal Democrats from 20 States met in Detroit Aug. 7 to make a concerted effort to defeat President Roosevelt for re-election. Their leaders were former Senator James A. Reed of Missouri, former Governor Joseph B. Ely of Massachusetts, former Secretary of State Bainbridge Colby and Colonel Henry Breckinridge. All of these men made campaign speeches against President Roosevelt, as did former Governor Alfred E. Smith and John W. Davis, both of whom had been Democratic candidates for the presidency in earlier campaigns. Another prominent Democrat who turned against the President was Lewis Douglas. On the side of the Republicans, former President Hoover made a series of addresses,

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attempting to show the voters the fallacies of the President's arguments and the dangers to American institutions of the continuance of the New Deal administration in office.

ELECTION STATISTICS

President Roosevelt and Vice-President Garner carried every State except Maine and Vermont for an electoral vote of 523 to 8. Final official returns showed a record-breaking popular vote of 45,814,377. President Roosevelt's plurality of 11,069,785 was the largest ever given to a presidential candidate. Even so, Landon and Knox polled the second largest vote ever cast for a Republican ticket, being surpassed only by Hoover and Curtis in 1932. All minor parties showed declines this year. The Union Party candidates, William Lemke and Thomas C. O'Brien, received less than a quarter of the votes cast for the third party under Theodore Roosevelt in 1912 and for Robert M. LaFollette in 1924. The Socialists, under the leadership of Norman Thomas and George A. Nelson, polled slightly more than a fifth as many votes as they did in 1932. The Communists, Earl M. Browder and James W. Ford, Negro, made the best comparative showing among the minor parties. They had three-quarters as many votes as the Communists' 1932 candidates. The total returns were: Roosevelt, 27,752,309; Landon, 16,682,524; Lemke (Union), 892,793; Thomas (Socialist), 187,342; Browder (Communist), 80,096; Colvin (Prohibition), 37,609; Aiken (Social-Labor), 12,793; scattering and void, 168,911.

CONCLUSIONS FROM ELECTION RESULTS

Certain conclusions may be drawn from the election returns. They revealed the great personal popularity of President Roosevelt. They also proved that the victory was not a sectional or class one, but extended over the entire country. The people generally voted approval of an administration during which business conditions had greatly improved. In addition to the advantage possessed by the Democrats in controlling Federal patronage they also controlled the machinery of government in an overwhelming majority of the States. The votes of persons on relief, of organized labor, and of the Negroes swelled the size of the majority. By way of contrast, the Republican Party was divided and lacking in organization. It could not compete effectively with the popularity of the President and the competent management of Chairman Farley.

The campaign was the costliest ever recorded in American history, expenditures totaling more than \$13,000,000. Of this huge sum the Republican National Committee reported expenditures of almost \$7,000,000, and the Democratic National Committee nearly \$3,500,000. Minor parties and independent groups, such as the American Liberty League, the United Mine Workers, the National Union for Social Justice and the Good Neighbor League, listed disbursements of more than \$2,000,000. The total sum was increased by the amounts spent by individual candidates and local organizations.

THE PRESIDENT AND HIS POLICIES

THE PRESIDENT AND HIS POLICIES

BY EVERETT S. BROWN

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FOREIGN POLICY

A significant development in the policies of the President during 1936 was his emphasis on foreign affairs. Despite domestic difficulties, accentuated by drought and labor strikes and a presidential election campaign, President Roosevelt devoted an increasing amount of attention to foreign policy. This was noticeable in the beginning of the year when he gave foreign affairs the first place in his annual message to Congress; it was emphasized by his remark, immediately prior to his South American trip, that world peace was more important than the settlement of the shipping strike, and it was climaxed by his personal appearance in December at the peace conference in Buenos Aires.

In his annual address the President criticized nations abroad which had "reverted to the law of the sword," and declared that the United States had sought "in every possible way to limit world armaments and to attain the peaceful solution of disputes among nations." In the field of commerce it had been our policy, the President said, "to encourage a more reasonable interchange of the world's goods," and in the field of international finance "to put an end to dollar diplomacy." Furthermore, the United States was following a twofold neutrality toward nations engaging in wars not of immediate concern to the Americas: first by declining "to encourage the prosecution of war by permitting belligerents to obtain arms, ammunition or implements of war from the United States"; and second, by discouraging "the use by any belligerent nations of any and all products calculated to facilitate the prosecution of a war in quantities over and above our normal exports of them in time of peace." In expressing the hope that we were not facing another era of a scramble for colonial empire, President Roosevelt

declared that if we were, "then the United States and the rest of the Americas can play but one role,"—to remain neutral, to maintain an adequate defense and to encourage other nations to return to the ways of peace. The principal points in his foreign policy were again summarized in his Chautauqua address of Aug. 15 in the following words: "We seek to dominate no other nation. We ask no territorial expansion. We oppose imperialism. We desire reduction in world armaments." As another of the links in the chain of friendship binding the United States and Canada together the President paid an official visit to Canada July 31.

PRESIDENT ROOSEVELT AND SECRETARY HULL AT BUENOS AIRES

Speaking before the Inter-American Peace Conference in Buenos Aires on Dec. 1, President Roosevelt emphasized the common interest of the American democracies in the maintenance of peace and added that it must be made clear that "we stand shoulder to shoulder in our final determination that others who, driven by war madness or land hunger, might seek to commit acts of aggression against us, will find a hemisphere wholly prepared to consult together for our mutual safety and our mutual good."

Secretary of State Cordell Hull, in his address before the conference Dec. 5, developed this Pan-American policy further. He said the delegates of the American nations, in the face of grave and threatening world conditions, must realize that mere words were not sufficient but that words and hopes must be quickened into "a specific, embracing program to maintain peace." In this connection Secretary Hull declared: "While carefully avoiding any political entanglements, my government strives at all

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times to cooperate with other nations to every practical extent in support of peaceful objectives, including reduction or limitation of armaments, the control of traffic in arms, taking the profits out of war, and the restoration of fair and friendly economic relationships. We reject war as a method of settling international disputes, and favor such methods as conference, conciliation and arbitration." Mr. Hull then laid down an eight-point peace formula for the Americas: 1. educate the people to oppose war and understand its underlying causes; 2. promote closer international collaboration and the exchange of views, ideas and information; 3. safeguard the nations of the Western Hemisphere from using force against one another by agreements providing peaceful means of settling international difficulties; 4. devise effective common neutrality policies; 5. develop a liberal policy of commerce which would lower excessive trade barriers and lessen injurious trade discriminations; 6. recognize the principle of practical international co-operation; 7. re-establish and revitalize international law; 8. restore good faith and proper respect for the sanctity of treaties and other international engagements.

At the ensuing parley, which extended over a period of three weeks, the delegates put the proposals of President Roosevelt and Secretary Hull into specific form through a series of conventions and agreements. They laid the groundwork for consultation among the American republics if war threatens the New World from within or without and for peaceful settlement of American disputes. In his closing address to the members of the conference, Secretary Hull emphasized his often-expressed conviction that trade rivalries are the most prolific seeds of war by declaring: "The twenty-one republics could have taken no more significant step in promoting regional and world peace than by making their unanimous, unequivocal declaration for equality of commercial treatment and lowering the barriers obstructing trade." Not to be overlooked in the interpreta-

tion of the new development in our foreign policy was the President's remark at Rio Janeiro: "Each of us has learned the glories of independence. Let each one of us learn the glories of interdependence."

TAXATION AND FINANCE

In his annual message to Congress Jan. 3, President Roosevelt reviewed optimistically the restoration of national income and stated that, based on existing laws, it was his belief that no new taxes, over and above the present ones, were either advisable or necessary. With increases in the national income and in employment, a reduction in our appropriations for relief was anticipated. However, two events occurred which changed the picture materially. The first was the decision of the Supreme Court holding the Agricultural Adjustment Act unconstitutional, resulting in losses to the government of estimated revenue of \$452,000,000 from processing taxes for the fiscal year 1936. The second was the passage by Congress, over the President's veto, of the Adjusted Compensation Payment Act, which provided for the immediate payment at their face value of the veterans' adjusted service certificates, which by their terms were not due until 1945. To meet the additional requirements of the Treasury on account of these changes, the President requested Congress to provide additional revenue to make good the loss of the processing taxes for the fiscal year 1936, to defray the annual cost of operation of the new farm program set up in place of the AAA, and to amortize over a period of nine years the cost of payment of the adjusted service certificates. In response to this request, Congress passed the Revenue Act of 1936, providing for a graduated tax on undistributed corporate earnings. The act was bitterly criticized by its opponents who contended that the plan proposed an entirely untried system of obtaining revenue; that it penalized all weak and growing corporations to the benefit of strong corporations already in a position to distribute current earnings in dividends; that it would

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retard business expansion and seriously affect the unemployment problem; that it made no provision for corporations paying debts out of earnings; that no new taxes ought to be enacted until an honest effort had been made to reduce expenditures and eliminate waste, and that the primary purpose of the act was not to raise revenue but to force the distribution of corporate earnings, irrespective of the needs of business.

On Feb. 25, by authority of the President, Secretary of the Treasury Morgenthau issued a statement announcing that the United States had joined with the governments of Great Britain and France in a plan to link the pound, the franc and the dollar on a more stable basis, thereby "affirming a common desire to foster those conditions which safeguard peace and will best contribute to the restoration of order in international economic relations and to pursue a policy which will tend to promote prosperity in the world and to improve the standard of living of peoples." This agreement was later broadened to include Switzerland, The Netherlands and Belgium. A change was made in the agreement, as well as in the Jan. 1, 1934 gold regulations, to prevent the export of gold by private bankers. The increased flow of foreign gold into the United States caused the President to call attention to the danger to the domestic economic system surrounding foreign investments in the United States. He pointed out the possible adverse effects of so-called "restless gold" on the stock market and the foreign exchanges, and ordered the Federal Reserve Board, the Treasury Department and the Securities and Exchange Commission to investigate the extent of foreign investments here with the object of recommending any legislation which the officials of those agencies thought would remedy matters.

FARM PROGRAM

The invalidation of the AAA by the Supreme Court brought from the President the brief remark: "The ultimate results of the language of

these opinions will profoundly affect the lives of Americans for years to come. It is enough to say that the attainment of justice and prosperity for American agriculture remains an immediate constant objective of my administration." Steps were taken immediately to amend the Soil Conservation Act of 1935 to serve as a basis for a new farm policy. "The new law," the President said in signing it, "has three major objectives which are inseparably and of necessity linked with the national welfare. The first of these aims is conservation of the soil itself through wise and proper land use. The second purpose is the re-establishment and maintenance of farm income at fair levels, so the gains made by agriculture in the past three years can be preserved and national recovery can continue. The third major objective is the protection of consumers by adequate supplies of food and fiber now and in the future." The national goal of the tentative program for 1936 called for an increase in the area of crop land in soil-conserving and soil-building crops such as grasses and legumes. In order to accomplish this goal, it was necessary to classify crops into two main groups, one consisting of soil-building and soil-conserving crops, and the other consisting of soil-depleting crops. The program to be carried out provided for a system of conservation payments to farmers who wished to participate. The plan proposed that a moderate soil-maintenance payment should be made for each acre, up to a maximum, planted to soil-conserving or soil-building crops or devoted to approved soil conservation practice in 1936, and a larger soil-improvement payment per acre should be made for each acre shifted from soil-depleting crops to soil-conserving or soil-building crops, provided the payment would be made only up to a specified maximum percentage. In the case of farms occupied by share-croppers or share-tenants, it was proposed to divide the payments between landlords and those actually occupying the land. Farmers renting for cash would receive the entire payment.

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The new law carried a specific limit of \$500,000,000 on the total amount of obligations that might be incurred in any calendar year.

The farm problem was greatly intensified by the severe and continued drought which extended over a large portion of the farming area. In July an emergency and long-range program, designed simultaneously to bring immediate relief to drought-stricken farmers and to prepare the way for fundamental land-use changes, was announced by Rexford G. Tugwell, then Under-Secretary of Agriculture. The program involved a comprehensive system of loans and grants through the Resettlement Administration to enable the farmer to survive the winter and for large-scale employment on WPA projects where family heads or other employable members were able to take such work. Loans made in areas designated as submarginal were to be conditioned on an agreement by the borrower to cooperate with Federal and state agencies in the carrying out of any remedial program that might be evolved. The Federal Government could thus make use of the emergency drought program as a means of carrying out the longer-time scheme of re-locating thousands of farm families on more fertile soils. After a tour of the drought area, President Roosevelt declared that the government's long-time drought and land-use program should be completed and put into operation at the earliest possible moment. He appointed a committee, with Secretary of Agriculture Wallace as its chairman, to work out a plan of crop insurance and directed it to prepare a report and recommendations for legislation providing a plan of "all risk" crop insurance. He suggested the combination of crop insurance with a system of storage reserves to operate so that the surpluses of fat years could be carried over for use in lean years. Measures of this kind, according to the President, "should make three important contributions to the general welfare of the country as a whole: first, protection of the individual farmer's income against the

hazards of crop failure or price collapse; second, protection of consumers against shortages of food supplies and against extremes of prices, and third, assistance to both business and employment through providing an even flow of farm supplies and the establishing of stability in farm buying power." A second committee, under the chairmanship of Morris L. Cooke, Rural Electrification Administrator and chairman of the Great Plains Drought Committee, was asked by the President to work out the Great Plains Permanent Land-Use Program and report to him its findings by Jan. 1, 1937. The appointment of Mr. Cooke was regarded as indicating the President's approval of the report made by the first drought committee, which recommended studies toward the complete revamping of land use in the West.

On Nov. 17, President Roosevelt appointed a committee of 38 members to make a study of farm tenancy with a view to recommending "ways of developing a land tenure system which will bring an increased measure of security, opportunity and well-being to the great group of present and prospective farm tenants." In naming Secretary Wallace to the chairmanship of this new committee, the President asked for a report not later than Feb. 1, 1937 "on a long-term program of action to alleviate the shortcomings of our farm tenancy system."

As the year drew to a close it was reported that experts in the AAA were working on amendments to the Soil Conservation Act designed to keep control of the existing farm program in the Federal Government and give the government broader powers over agriculture. The present law provides for transfer of administration to the States after Jan. 1, 1937. Federal officials have expressed the opinion that state administration would be ineffective.

SOCIAL SECURITY AND RELIEF

On Sept. 17, in addressing the meeting on Mobilization for Human Needs, President Roosevelt stated

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that "personal and family insecurity—that difficult problem of past years—your government has undertaken at least to dissipate in part by the enactment of the Social Security Act, providing for cooperative Federal and State public welfare, public assistance, unemployment compensation and old-age benefits." He urged private agencies to encourage private re-employment and to continue their efforts to extend medical care, asserting that the cooperation given by the Federal Government in social welfare extended rather than contracted the responsibility of private activities for local relief. In a later statement, made just prior to his departure for South America, the President appealed to industry to continue and increase its re-employment efforts. He asked that a greater number of men over 40 years old be hired, in order to reduce the number of workers over that age who were permanently unemployed, thus, in turn, reducing the amount of money which Congress must appropriate for relief purposes. He urged the Business Advisory Council of the Department of Commerce to study the problem of further absorption of workers by private industry, the problem of improving living conditions of low income groups through low-cost housing and slum clearance, and the problem of improving wages and working conditions of employees in industry. To the third National Conference in Labor Legislation, called by Secretary of Labor Perkins, the President sent a message in which he said he believed the country, through its vote in the November elections, had given a mandate in unmistakable terms to its legislators and executives to proceed along the lines of raising labor standards "until working people throughout the nation and in every State are assured decent working conditions, including safe and healthy places of work, adequate care and support when incapacitated by reason of accident, industrial disease, unemployment or old age; reasonably short working hours, adequate annual incomes, proper housing and elimination of child labor."

At a press conference shortly after his return from South America in December, President Roosevelt said he would ask Congress for \$500,000,000 to complete the relief program for the current fiscal year. This amount would be in addition to \$1,425,000,000 previously appropriated. It was explained that the drought had caused an unanticipated drain on relief funds. The President also agreed with Robert Fechner, Director of the Civilian Conservation Corps, that the CCC should be made a permanent agency of the government, or so long as there were jobless but willing young men in the country.

POWER POLICY

An indication of the President's policy with respect to electric power was contained in his explanation of the scope and purposes of the conference called to consider immediate questions resulting from the impending expiration of existing contracts between private companies and the Tennessee Valley Authority. A satisfactory understanding regarding pooling of power and transmission facilities in the southeastern States, it was felt, could be used as a basis for similar arrangements in other regions affected by major Federal power projects. The President explained that the public interest demanded that the power being generated, or to be generated, by the Tennessee Valley Authority and at the Bonnaville Dam and other public works projects "should be made to serve the greatest number of our people at the lowest cost and, as far as possible, without injury to existing actual investment." This objective he held could best be attained by cooperative pooling of power facilities within each region.

SUMMARY OF POLICIES AND OBJECTIVES

In the course of his speech in Madison Square Garden, New York, on Oct. 31, President Roosevelt summarized his policies and stated his objectives as follows:

"Of course we will continue to seek to improve working conditions for

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the workers of America—to reduce hours over-long, to increase wages that spell starvation, to end the labor of children, to wipe out sweat-shops. Of course we will continue every effort to end monopoly in business, to support collective bargaining, to stop unfair competition, to abolish dishonorable trade practices. For all these we have only just begun to fight.

"Of course we will continue to work for cheaper electricity in the homes and on the farms of America, for better and cheaper transportation, for low interest rates, for sounder home financing, for better banking, for the regulation of security issues, for reciprocal trade among nations, for the wiping out of slums. For all these we have only just begun to fight.

"Of course we will continue our efforts in behalf of the farmers of America. With their continued co-operation we will do all in our power to end the piling up of huge surpluses which spelled ruinous prices for their crops. We will persist in successful action for better land use, for reforestation, for the conservation

of water all the way from its source to the sea, for drought and flood control, for better marketing facilities for farm commodities, for a definite reduction of farm tenancy, for encouragement of farmer cooperatives, for crop insurance and a stable food supply. For all these we have only just begun to fight.

"Of course we will provide useful work for the needy unemployed; we prefer useful work to the pauperism of a dole.

"Of course, we will continue our efforts for young men and women so that they may obtain an education and an opportunity to put it to use. Of course, we will continue our help for the crippled, for the blind, for the mothers—our insurance for the unemployed—our security for the aged. Of course, we will continue to protect the consumer against unnecessary price spreads, against the costs that are added by monopoly and speculation. We will continue our successful efforts to increase his purchasing power and to keep it constant."

THE YEAR IN CONGRESS

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THE PRESIDENT AND CONGRESS

Readers of 1935 will recall that the President held out unusually long and was unusually firm in his efforts to secure the legislation he desired from the First Session of the Seventy-fourth Congress. Not until August, 1935, did his party leaders free the Senators and Representatives from the heat of Washington.

The purpose of this strategy of 1935 became clear in 1936. The President's opening message to Congress¹ was conclusive demonstration that he had no major program to offer to the Second Session of the

Seventy-fourth Congress. Contrary to custom, no legislation was requested in the message and few legislative problems were even mentioned. Congress was highly praised for its excellent efforts in contending for "a new relationship between government and people," and it was urged to face the challenge of a "resplendent economic autocracy." Much important legislation, of course, did come from this session but a considerable part of it was forced on the Democratic leaders by circumstances.

Delivered as it was under dramatic circumstances, the President's message was a call to arms of the Democratic Party rather than a call to legislation of the Congress. It was

¹ For fuller development of the attitudes of the Administration, see "The President and His Policies" pp. 11-16.

one of the rare times when the Congress is called into a night session to hear the President's address. Nation and world-wide radio hook-ups carried the fighting speech to millions of voters. Congress was merely the sounding board, but since Washington was seething with politics and there were 69 Democratic Senators and 318 Democratic Representatives, Congress seemed to relish the sounding board rôle. A few of the more conservative of the minority groups (23 Republicans, one Progressive, and one Farmer-Laborite in the Senate; 104 Republicans; seven Progressives, and three Farmer-Laborites in the House) resented this intrusion on the dignity and precedents of Congress but the Republican leaders made no fight on the issue as to when the message should appear. Leader Bertrand H. Snell protested, but made no formal objection.

Since this was a campaign year the cries of "dictatorship" and "a supine Congress" were echoed throughout the session. As noted in this summary in previous issues of *THE AMERICAN YEAR BOOK*, however, there was less and less content to this charge after the emergency session of 1933. The failure of Congress to swallow Administration suggestions as a whole in 1934 and the even more marked restraint in 1935 were followed by a continued coolness to many White House suggestions in 1936. "Dictatorship" existed only in the imagination of those who wanted to find it.

Although partisan considerations were of more than ordinary importance in the Second Session of the Seventy-fourth Congress and partisan considerations tended to enhance the power of the Chief Executive as leader of the Democratic power, the legislative record shows no signs of Congressional surrender. The bonus was passed over the President's veto; the tax bill was considerably changed from the President's proposals; neutrality legislation which had been forced on the President before was continued without heeding Administration proposals; public works' projects with Admin-

istration backing were defeated. Of course the Administration got much of what it wanted, notably in the more complicated fields such as taxation and agricultural where most Congressmen were beyond their depths. But as O. R. Altman, writing in the *American Political Science Review*, comments, the procedure in the latter case closely approximates the handling of important legislation in London. It does not savour of the methods of Berlin and Moscow. Administrative departments in the United States furnish technical advice to the legislative body which is compelling but not compulsory.

PARTISAN POLITICS

For a number of years this summary has given the partisan line-up on a number of the important roll calls. Frequently this information has been more important in indicating the fact that partisan considerations were outweighed by sectional or special interests than in indicating the partisan line-up on issues.

Partly because of the imminence of presidential and congressional campaigns and partly because of the increasing cleavage between parties on economic issues, Congressional roll calls in 1936 reflected far more tightly drawn partisan line-ups than hitherto. An excellent analysis of important record votes by the careful workers who prepare editorial research reports shows that cleavage clearly. Of 28 roll calls in the Senate listed by those reports, 13 seem to indicate a clear, though rarely complete, partisan line-up. Democrats opposed an export debentures amendment; Republicans favored it. Democrats opposed a dairy protection amendment to the soil conservation bill; Republicans favored it. (This last, it should be noted, is an odd instance in which the traditional cleavage between the sections represented by the parties enters into the altered party situation of the 1930's.) Republicans opposed Secretary Wallace's soil conservation bill and the Democrats tramped over the opposition. Senate Democrats also hewed to the line which Republicans were trying to cut

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across by supporting Jesse Jone's measure for exempting R. F. C. bank stock from taxation; by finding Federal Judge Ritter, of Florida, guilty of conduct unbecoming his office; by supporting the President's flood-control authority; by leaving the rural rehabilitation phrase in the emergency relief appropriations of 1936; by suggesting study of the Florida ship canal; by passing the relief appropriation bill; by taking up the revised Guffey Coal bill, and by passing the conference report on the tax bill.

Eighteen House roll calls are also listed by editorial research reports. In at least nine of these there was clear evidence of party voting. In addition to the dairy protection, soil conservation, Ritter impeachment, tax bill, and return of relief to the States, and other matters House Democrats differed from the Republicans in voting for the tobacco compact bill and for a Senate lobby committee appropriation.

Before jumping to the conclusion that these roll calls signify an economic line-up of the nature of that in European party systems, the reader should look carefully over the list of roll calls. In many cases the parties split on more or less technical matters which might reflect credit or discredit on the Administration rather than the battling out of fundamental issues. Fundamental differences on such questions as Federal centralization and amount of welfare and relief undoubtedly do exist, but it is easy to exaggerate their importance.

THE MECHANISM OF CONGRESS

Aside from the minor flurry over the broadcasting of the President's opening message at a night session, there was not much discussion nor many important changes in the legislative machinery. The discharge rule of the House was worked on three times; once it was not needed; another time it failed, and in the third case the bill finally failed. A motion to discharge the inflationary Patman bonus bill was kept in suspense as a means of forcing the

Vinson bill through. The Frazier-Lemke farm mortgage financing bill was discharged by a vote of 220 (159D, 51R, 3FL, 7P) to 153 (115D, 38R), but a shift of votes on final passage indicated that a number of members wished merely to bring the bill out into the open. An attempt was made to bring the anti-lynching bill out of the Judiciary Committee and the requisite signatures were secured but the adjournment of Congress prevented a vote on the motion to discharge.

Legislation was done almost entirely by special rules, calls of committees being eliminated entirely. In one case a minor bill was put through the House on a rule which provided that if the rule were accepted, the bill would be considered as having been engrossed and read a third time and that a vote would be taken immediately upon final passage. Despite bitter Republican attacks this rule and the bill were passed.

Just as the storm center of House parliamentary troubles is the securing of consideration of bills, the storm center of the Senate mechanism is the securing of a final vote when someone wishes to filibuster. The death of Huey Long removed some of the Senate's trouble in this direction but left a few minor filibusterers. A number of Senators under the aegis of Black of Alabama filibustered against the postal appropriation bill to force House acceptance of a direct ship subsidy bill in place of postal subsidies. This odd procedure succeeded and the House passed the subsidy bill. A little later, Senator Holt succeeded in a filibuster against the revised Guffey coal bill.

The few vacancies resulting from death made little change in the organization of Congress. Senator Walsh became Chairman of the Naval Affairs Committee. The sudden death of Speaker Byrns June 4 postponed adjournment till after the Republican Convention. The majority leader, William B. Bankhead, was chosen to replace Byrns and the question of the new floor leader was left open.

THE YEAR IN CONGRESS

INVESTIGATIONS AND IMPEACHMENTS

Court injunctions defeated efforts of the Senate Lobby Committee to issue a blanket subpoena for telegrams sent and received by a Chicago law firm from Feb. 1 to Dec. 1, 1935. Thereupon W. R. Hearst attempted to secure an injunction against use of messages previously seized. The case is still in the courts (January, 1937).

A House investigation of the old age revolving pension movement resulted in the irate walkout of Dr. Townsend, leader of the movement. Contempt charges were filed but no action taken until after election to avoid making a "martyr" of Dr. Townsend.

The Senate authorized an extensive investigation of violation of free speech and the right of collective bargaining; a continued investigation of receivership and bankruptcy proceedings, and an investigation of railroad financing and reorganization by the Interstate Commerce Commission. Both houses authorized investigation of expenditures, and the Senate of patronage, in the presidential campaign.

Much interest attached to the dramatic impeachment of Federal District Judge Halsted A. Ritter of southern Florida. Impeachment was voted by the House 181 (172D, 8R, 1FL) to 146 (63D, 79R, 4P) on March 2 on charges that Ritter had accepted money from a former law partner to whom he had given a lucrative receivership appointment. The Senate spent more than a week on the trial. On most of the articles of impeachment the verdict was just short of the two-thirds vote required for conviction. On the seventh article, stating that Ritter had been guilty of conduct unbecoming his office, he was found guilty by an exact two-thirds majority. This was the fourth case of removal of a Federal judge by impeachment.

APPROPRIATIONS

Money matters make difficulty for most legislative bodies and the Sec-

ond Session of the Seventy-fourth Congress was no exception. A total of \$9,579,756,510 was appropriated by the Second Session. The soldier bonus led the way with a \$1,730,000,000 appropriation added to the Independent Offices bill—making the bill greater than all departmental supply bills for the preceding fiscal year. Work relief ran a close second with a \$1,425,000,000 appropriation. It was part of a First Deficiency Appropriation Bill which totalled \$2,375,397,538, including also an item of \$458,361,860 for the social security program, \$265,000,000 of the latter to be placed in the old age reserve account in the Treasury.

Departmental appropriations which attracted most attention included the Navy which was raised from the \$458,000,000 of the fiscal year 1936, to \$526,000,000 in 1937, and War, which rose from \$402,998,000 of 1936 to \$572,000,000. Various other departments received substantial increases. The figures for the 1937 appropriations follow:

Agriculture.....	\$ 174,000,000
District of Columbia.....	44,000,000
Independent Offices.....	2,890,000,000
Interior.....	115,000,000
Legislative.....	23,000,000
Navy.....	527,000,000
State, Justice, Commerce, and Labor.....	116,000,000
Treasury and Post Office....	993,000,000
War.....	572,000,000

Departmental supply bills were increased by the Senate to a tune of more than \$100,000,000 and several economy recommendations of the President were turned down. The spending spree of an election year was in merry progress. The Bureau of the Budget went through its customary procedure but had little effect on Congressional action except as the budget furnishes a useful control document, removing the necessity for extremely detailed appropriations. Appropriation bills tend, more and more, to give lump sum figures, and to go into detail only when the Congress wishes to stop some specific action or to force another action.

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AGRICULTURAL ADJUSTMENTS¹

Invalidation of the Agricultural Adjustment Administration found the lawyers, economists, and other experts of the Department of Agriculture ready with a new program which was superior in many ways to the created legislation. This so-called soil conservation act, utilizing grants in aid to the States to secure diversion of land from "soil depleting surplus cash crops" to soil conserving crops, was introduced in the Senate Feb. 6 and given some interesting though random debate. The inevitable doubts as to constitutionality were expressed. Regard for the consumers led Senator Wagner to offer an amendment that the act should not be used to encourage restriction of production below the amount needed for normal domestic use. This amendment was defeated in the Senate, Feb. 14, 25 (22D, 2R, 1P) to 51 (37D, 13R, 1FL), but was reinserted in the House and remained in the final bill.

Much complaint had come from the South that tenants and sharecroppers were losing work and gaining nothing under the A.A.A. Accordingly the House amended the soil conservation bill to enable tenants and shareholders to participate in subsidies. This was modified in conference to provide that the Secretary of Agriculture shall protect so far as possible the interests of tenants, sharecroppers, and small producers.

The traditional economic cleavage already referred to appeared on a dairy protection amendment to the soil conservation bill: "No crops intended for sale be harvested from, and no livestock intended for sale, or the products of which are intended for sale, be grazed or pastured on such land." Republican Senators who had long voted for dairy protection, although as a matter of tariff, not of soil conservation, cheerfully chimed in with their leader, McNary of Oregon. However, the

amendment was defeated 28 (13D, 14R 1P) to 45 (42D, 2R, 1FL). A similar amendment in the House was rejected 146 (51D, 86R, 2FL, 7P) to 224 (all D). In conference, dairy industries were somewhat mollified by a provision making them eligible for benefit payments.

The export debenture plan amendment failed in the Senate 32 (16D, 14R, 1FL, 1P) to 42 (40D, 2R).

The A.A.A. Amendment Act of 1935 which appropriated 30 per cent of import duties for financing adjustments in production of agricultural commodities is amended to authorize use of this money for domestic allotment payments. The Secretary is also authorized to allot to States or to individual farmers for control of wind erosion in the southern great plains \$2,000,000 of 1935 relief funds. The power of the President to limit imports interfering with agricultural programs of the United States is also extended to the plans envisaged in this act. The act was approved Feb. 29, 1936.

An act to amend the Emergency Farm Mortgage Act of 1933 authorized the Reconstruction Finance Corporation to make loans not exceeding \$125,000,000 for the benefit of drainage, levee, irrigation, and similar districts, which are engaged in projects for improvement of land for agricultural purposes. A proviso excludes new land which may be brought into such districts. These loans are to be made for the purpose of refinancing or reducing the obligations of these districts.

As a result of the Hoosac Mills decision, invalidating the A.A.A. program, the Administration introduced and Congress promptly approved a repealer of the Bankhead Cotton Act, the Kerr-Smith Tobacco Act, and the Potato Act of 1935, all of which were unconstitutional. The repealer was approved Feb. 10, 1936.

On April 10, the President approved a bill which authorized the Secretary of Agriculture and the Governor of the Farm Credit Administration to increase the capital

¹ In outlining of the acts and analyzing many individual acts, the writer has drawn on the review by Hal H. Smith in *The New York Times* for June 22. In no case, however, is Mr. Smith responsible for interpretations, or explanations.

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stock of the Commodity Credit Corporation by \$97,000,000 and directed the Reconstruction Finance Corporation to acquire \$97,000,000 of the capital stock of the Commodity Credit Corporation. The additional capitalization of the Commodity Credit Corporation was intended to enable it to expand its direct loans to farmers in the hope of stabilizing prices. No new expenditure of Federal funds was involved. Another farm credit act continues the three and one-half per cent interest rate on Federal Land Bank loans for an additional year.

The agricultural appropriation act appropriated \$191,304,606 for the Department's fiscal year, 1937. Twenty-five million dollars went to the Soil Conservation Service (which it should be noted is distinct from the administration of the new soil conservation program). Sixty million dollars went to the Federal Aid Highway System, \$4,000,000 to the Farm Credit Administration, and \$18,000,000 to the Forest Service.

SOIL CONSERVATION ACT

Details of the Soil Conservation and Domestic Allotment Act will be given fairly fully as it is a well-thought-out effort at constitutional compromise between the need for Federal action and the attitude of the Supreme Court. The act provides for conservation of soil resources, maintenance of farm income ("real" agricultural prices) on the average of the period, 1909-1914, assurance of adequate supplies of food for consumers, and protection of rivers and harbors against the effects of soil erosion.

The act authorizes temporary Federal aid in the form of direct grants to farmers to assist voluntary soil conservation until state plans are ready, or until Jan. 1, 1938, after which grants will be made only to States upon submission of a state program and approval by the Secretary of Agriculture, under the terms of the act. An annual appropriation of not more than \$500,000,000 is made to the Secretary of Agriculture.

The policy of the act is declared to include the following ends, in addition to those already listed: preservation and improvement of soil fertility; promotion of the economic use and conservation of land; lessening of the waste of national soil resources.

The Secretary is empowered to make payments to farmers, under the temporary plan, measured by the treatment and use of land for soil restoration and erosion prevention, or by changes in the use of land, or by a percentage of normal production of specific commodities equal to the normal percentage required for domestic consumption. Payments may be made on any one or any combination of these bases.

In connection with the permanent plan the Secretary is required to apportion funds each year to the States for the next year. Factors to be considered in each apportionment include the acreage and value of the major soil depleting and major export crops produced and the acreage and productivity of land devoted to agricultural production. State plans must include: (1) provisions for a state agency to administer the plan (in other words, the money may not be turned over to local units without state supervision however much county representatives in rural legislatures may desire that end); (2) provisions for such methods of administration and such participation by county and community committees of producers as the Secretary desires; and (3) provisions for submitting such reports as the Secretary wishes. One-fourth of the money apportioned to each State shall be payable following approval of the state plan. The remainder will be paid in installments which cease in case of failure of a State to carry out the provisions of its plan. Before Jan. 1, 1938, the Secretary may cooperate with the Agricultural Extension Service, or other approved state agency. After that date, the state administrative agency would be the body authorized by the State itself, with approval of the Secretary.

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As noted above, tenants and sharecroppers are expressly included as agricultural producers under the authorization empowering the Secretary to make payments. Also the Secretary must have due regard for maintenance of a continuous and stable supply of agricultural products for the consumer. Use of funds for expansion of domestic and foreign markets is authorized. Moneys may also be employed in search of additional markets for agricultural commodities or disposition of surpluses.

TOBACCO STATE COMPACT ACT

A new effort in agricultural production control was tried out in the Tobacco State Compact Act, approved by the President April 25, 1936. The bill was approved by the House April 8, 190 (186D, 1R, 2FL, 1P) to 116 (37D, 74R, 5P) and by the Senate on April 21 without a record vote. It authorized States in which tobacco is produced to negotiate compacts for the purpose of regulating and controlling the production of tobacco in such States. All state laws authorizing such compacts shall be essentially uniform. The consent of Congress was granted to any compact agreed upon the basis of a tobacco control act passed by Virginia on March 13, 1936. The Secretary is authorized to advance funds to tobacco commissions established in each State under the act, although the funds must be repaid. He is also authorized to designate tobacco producers or other persons engaged in the tobacco industry and Department of Agriculture officials to advise with state tobacco commissions on any compacts entered into in pursuance of this bill. He is also permitted to make loans for administration purposes to any association of tobacco producers which would operate with respect to the 1936 crop in the Georgia tobacco belt, on the not unreasonable assumption that Governor Talmadge would not call a special session for a tobacco compact. Provision was also made for a \$300,000 appropriation for administering the act and for regulation of Puerto Rico cigar filler tobacco if a

compact concerning such tobacco should be entered into.

REGULATION OF COMMODITY EXCHANGES

A bill for regulation of commodity exchanges which had passed the House in the First Session was suddenly revived, at the suggestion of the Administration, and passed in the closing days of the session. On May 29 the Senate approved it 62 (47D, 12R, 2FL, 1P) to 16 (8D, 8R), and it was signed by the President June 3. The Grain Futures Act was amended in order to prevent obstructions to interstate commerce in grains and other commodities. The bill creates a Commodity Exchange Commission, consisting of the Secretaries of Agriculture and Commerce and the Attorney General, with a large measure of discretionary power over exchanges trading in wheat, cotton, rice, corn, and other grains, butter and eggs, and other agricultural commodities. The new commission is to operate in order to reduce "excessive speculation" in any commodity under futures contracts, on the ground that sudden fluctuations in price are an undue and unnecessary burden on interstate commerce. To prevent this burden the commission is empowered to fix limits on the amount of trading under contracts of sale of such commodity by any one person. Bona fide hedging orders are exempted from such limitation, and brokers may execute buying and selling orders received at the same time.

The well-developed Federal control technique of registration is used. Commission merchants and brokers are required to register with the Secretary of Agriculture and to keep customer deposits separated from their own funds and to be ready to account for such deposits. Registration may be suspended or revoked after notice and hearing. Exchanges and warehouses where commodities are stored for future delivery shall be open to Federal inspection. Trading may be suspended for six months on any exchange which fails to comply with any provision of the act.

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BANKRUPTCY

The soon-to-perish Municipal Bankruptcy Act of May 24, 1934, which was due to expire in May, 1936, was, by an act approved April 10, 1936, extended to Jan. 1, 1940. This act conferred additional jurisdiction on courts of bankruptcy for the relief of various units of local government. The act was subsequently declared unconstitutional in a Supreme Court decision.

Another act (April 11, 1936) amended the Municipal Bankruptcy Act to lower the requirements for proceedings for drainage and irrigation districts. Consent of only 30 per cent of the creditors to the filing of a petition and 51 per cent to confirmation of a plan would have been required under the revision.

CIVIL SERVICE

Although reform organizations made earnest efforts to secure extension of civil service to postmasters and other unclassified Federal employees, no powerful support was accorded to them. A few minor bills were passed. The Federal Employees' Vacation Act was approved March 14, 1936. It provided that all civilian officers and employees of the United States (except District of Columbia teachers and Panama Canal and Railroad employees) should be entitled to 26 days of annual leave with pay exclusive of Sundays and holidays. Time may be accumulated to a total of not exceeding 60 days. Temporary employees are limited to two and one-half days leave for each month of service.

The Federal Sick Leave Act was approved at the same time. It standardizes sick leave for all civilian employees of the government. Such leave may be accumulated at the rate of one and one-quarter days per month, the total not to exceed 90 days. Temporary employees receive the same monthly allowance. Administrative officers may advance 30 days sick leave with pay beyond accrued sick leave in cases of serious disability or when required by urgent situations.

COMMERCE

Independent merchants who have been filling the state statute books with anti-price discrimination laws began a march on Washington in this session. The Robinson-Patman Price Discrimination Act, which the merchants demanded, was approved by the Senate April 30, by the House May 28, and by the President June 20. It is made unlawful for any person engaged in interstate commerce to discriminate in price between different purchasers of the commodity (of like make and quality) where either or any of the purchases are involved in commerce and where the effect of such discrimination may be to lessen competition or create a monopoly in any line of commerce. Nothing in the act shall prevent differentials which are based on differences in cost of manufacture, sale, or delivery, resulting from the differing methods or quantities in which such commodities are sold or delivered.

The Federal Trade Commission is empowered to fix quantity limits for particular commodities in cases where available purchasers of large quantities are so few as to render differentials unjustly discriminatory. Nothing in the act shall prevent persons engaged in commerce from selecting their own customers, when not in restraint of trade. Nothing shall prevent price changes in response to changing conditions of the market or of marketability of goods. The Commission is empowered to issue orders terminating any action which is price discriminatory. It is unlawful for any person engaged in commerce to undertake such action. Penalties of a fine of not more than \$5,000 or of imprisonment for not more than one year may be imposed. Nothing in the act shall prevent a cooperative association from returning part of its earnings to the members.

FLOOD CONTROL

A \$700,000,000 omnibus flood control bill passed the House but was filibustered to death in the Senate in 1935. A similar measure author-

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izing a \$1,000,000,000 ten-year program was coming out of the Senate in March when President Roosevelt requested that only emergency appropriations be made at that time. Accordingly the revised Senate bill authorized only about \$80,000,000. There were two squabbles in its passage through the upper chamber. An amendment to strike out provisions conferring power on the President to fit the priority of projects was rejected 31 (14D, 16R, 1FL) to 40 (37D, 1R, 1P, 1FL). Another amendment to eliminate state and local contributions and place the entire cost on the Federal Government was defeated 15 (13D, 2P) to 55 (36D, 16R, 1P, 2FL).

In conference the bill was reduced to \$320,000,000, authorizing about 200 projects in 40 States. It was approved by the President June 22. Appropriations actually listed totaled \$300,572,300 for river and harbor and flood control projects. The act carries a declaration of policy that flood control on navigable waters or their sources is a proper activity for the Federal Government in cooperation with state and local government. The Federal Government should improve or join in the improvement of navigable waters for flood control purposes if the benefits exceed the estimated costs and if the lives and economic security of the people are otherwise adversely affected. Investigations of flood control matters are to be made by the War Department while waterflow and watershed researches come under the jurisdiction of the engineers of the Department of Agriculture.

Local units are required to assure the Secretary of War that they will furnish the lands and rights of way, hold the United States free from damages on account of construction, and maintain and operate the improvements. When the amount of the estimated cost of lands and rights of way exceeds the estimated cost of construction, the local interests shall pay only half of the land costs. If 75 per cent of the benefits accrue to land outside the State (as in the case of up-river flood control

projects) the local interests need not be required to provide maintenance.

Compacts between the States for flood control are authorized although compacts which do not involve all expenditures by the Secretary of War must be submitted to Congress and various flood control projects are enumerated for prosecution under the direction of the Secretary of War and the Chief of Engineers. The Secretary of War is directed to continue the study of certain reservoirs in Missouri, Alabama, and elsewhere, for flood control operations and hydroelectric power development. Facilities for development of hydroelectric power may be placed on any dam erected under the provisions of the act.

Another bill took care of the Lower Mississippi Valley. It was passed by the Senate April 21 without a record vote and by the House May 22 by a vote of 162 to 156. It was approved June 15, 1936. The act amended the Mississippi Flood Control Act of 1928 to provide that the project for control of Mississippi floods should be modified in accordance with recommendations submitted by the Chief of Engineers to the Chairman of the Committee on Flood Control. The act authorized expenditures of \$272,000,000 over a five-year period, to complete the system of levees, reservoirs, and spillways initiated in 1928. Fifteen million dollars were appropriated as an emergency fund for flood control on the Mississippi. Spillway damage costs are to be borne by the Federal Government but other operation and damage costs by local government.

The reader will have noticed an increasing attention to interstate compacts in this session of Congress. The Citron Flood Compact Act, approved June 8, 1936, specifically consents to flood control and stream pollution compacts in New England and the Ohio Valley. Unanimous state agreement is required before the compact becomes binding.

HOUSING

An act, approved April 3, extended for another year the operation of the

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National Housing Act. The National Housing Administration is authorized to insure banks, trust companies, personal finance companies, mortgage companies, building and loan associations, installment lending companies, *etc.* against losses which they may sustain as a result of loans and advances of credit made by them during the year. Such insurance shall not exceed ten per cent of the total amount of loans, and the total liability shall not exceed \$100,000,000.

LABOR

Air Transport.—The Air Transport Labor Act, approved April 10, amended the railway labor act of 1926 to apply all of its provisions, except Section 3 (regarding voluntary formation of regional, section, and local boards) to common carriers by air and every carrier of air mail and their employees. The parties or either party to a dispute between an employee or a group of employees and a carrier or carriers by air may request the services of the National Mediation Board. The jurisdiction of the latter is extended to include pay, rules, and working condition problems not adjusted by the parties in conference or where conferences are refused. When in the judgment of the National Mediation Board, it becomes necessary to have a permanent national board of adjustment in order to provide for a prompt settlement of disputes between air carriers and their employees arising out of grievances or the interpretation of contracts, a National Air Transport Adjustment Board shall be established to function like the Railroad Adjustment Board.

Strikebreaking.—An interesting and little noticed bill against strikebreaking was passed by the Senate without a record vote Aug. 22, 1935, and by the House, 165 to 2, June 19, 1936. The act makes it a felony knowingly to transport in interstate or foreign commerce "any person with intent to employ such person to obstruct or interfere, in any manner, with the right of peaceful picketing during any labor controversy

affecting wages, hours, or conditions of labor, or the right of organization for the purpose of collective bargaining." Violations may be punished by a fine not exceeding \$5,000 or by imprisonment not exceeding two years, or both.

Hours and Wages.—Heavy labor pressure brought out of the House Judiciary Committee a very important Senate bill giving the Secretary of Labor power to fix hours and wages for all work on government contracts. As passed by the House on June 19 the bill was much more specific. It was accepted by the Senate at the end of the session.

"Little N.R.A."—The act, variously known as the "Little N.R.A.," and the Walsh-Healy Act, provides conditions for the purchase of supplies and the making of contracts by the United States Government. Public contracts in excess of \$10,000 made by any agency or instrumentality of the United States shall include stipulations requiring the contractor to be a manufacturer or regular dealer in the materials for which he is contracting. He must pay not less than the "prevailing wages" to persons employed in the industry or similar industries operating in the locality. He shall not permit any person to work more than eight hours a day or 40 hours a week. He must not employ boys under 16 nor girls under 18, nor convict labor. The contract shall not be performed in a plant or under working conditions which are unsanitary or unduly hazardous.

In case of violation of these stipulations, there shall be a penalty of a sum equal to the difference between the amount required to be paid and that actually paid in wages, a penalty of ten dollars a day for each child or convict employed, a cancellation of contracts for a breach of the labor provisions and authority to make new purchases or contracts against the offenders' account, authority to withhold penalties from the contract price or to recover such penalties by court action, and payments of recovered sums to the aggrieved employees. A contractor found guilty of violation may be

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barred from bidding on government contracts for three years. The Department of Labor is designated as the administrative agency and full provision for hearings and witnesses is made. Exceptions may be granted by the Secretary of Labor in cases where the contracting agency finds that enforcement would seriously impair government business. The Secretary may set a penalty for overtime labor. Articles usually bought in the open market, such as farm products, are excluded from the act.

HIGHWAYS

The President's budget message pointed to \$1,500,000,000 of relief funds made available for highway building from 1933 to 1937 and requested that the appropriation of \$125,000,000 for Federal highway aid in the fiscal year 1937 be put over to the fiscal year 1938. No effort was made to secure this postponement in either house, and the regular highway appropriation was carried in the Department of Agriculture bill.

The new act, approved June 16, extended the Hayden-Cartwright Act for two years (fiscal 1938-1939). An unusually restrictive amendment, indicative of the dangers lurking in the usually valuable grant-in-aid procedure, authorizes the Secretary to apportion Federal-aid highway funds without matching in any State where the proceeds of all special taxes on motor vehicle transportation are applied to highways. A new provision authorizes expenditures of \$50,000,000 each year for elimination of grade crossings and does not require state matching. Allotments are to be on the basis of population, Federal highway mileage, and railroad mileage. Other appropriations are made for forest trails, parkways, and Indian reservation roads.

An interesting though not important olive-branch gesture in the current Federal-state tax war provides that state gasoline taxes may be levied on fuels sold by post exchanges, ship stores, ship service stores, commissaries, or similar agen-

cies, when such fuels are used for other than governmental purposes.

NATIONAL DEFENSE

It has already been commented that worldwide war scares were greatly increasing our national defense appropriation. Those made by the second session of the Seventy-fourth Congress were the largest peacetime appropriations in our country. As compared with the first year of the Roosevelt Administration, they represent an increase of 87%.

The Navy Department bill was passed by the House May 1 and the Senate May 8, and was approved by the President June 3. The only roll call votes centered on motion to strike out capital ship appropriations. A House vote to recommit the bill with this intention lost, 73 (37D, 26R, 3FL, 7P) to 212 (168D, 44R). A Senate motion which would also have eliminated destroyer and submarine construction lost, 12 (8D, 2R, 2FL) to 40 (33D, 7R).

The act appropriates \$526, 546, 532 for the fiscal year 1937. It authorizes construction of 12 destroyers, six submarines, and not more than two battleships as replacements of old capital ships, although the President is given power only to order capital ship replacement in the event that it has been begun by other signatories to the London Naval Treaty of 1930. Funds are granted to allow increasing the Navy enlisted personnel from 93,500 men to 100,000, and a comparable increase in the marine corps. Three hundred and thirty-three new airplanes are also authorized, bringing the total authorized naval strength up to 1,259 fighting planes. An Army Air Corps Plane Bill increased the authorized strength in planes to whatever numbers were necessary to complete the Army Air Corps; the increase not to exceed 2,320 serviceable planes.

Another act, approved Feb. 15, provides for protection of tin and requires license from the President for exportation of tin.

The other big bill, the War Department Appropriations Act, was passed by the House Feb. 14 by a standing

vote of 204 to 36. It was passed by the Senate March 23, 53 (38D, 15R) to 12 (9D, 2R, 1P,) and approved by the President on May 15. It appropriated \$572,446,844 for the fiscal year 1936; \$189,341,985 is for non-military purposes, flood control, and rivers and harbors. The act provides for recruiting to increase the enlisted personnel from 147,000 to 165,000. A small increase in the National Guard is also made. Sixty million dollars are appropriated for the Army Air Corps increase mentioned above, enough to insure purchase of 565 of the planes in the fiscal year 1937.

An act to establish an Army Air Corps Reserve was approved by the President June 16, after much argument. The number of officers is limited to 1,350.

The London naval treaty between the United States, France, and England, signed on March 25, was ratified by the Senate on May 18. It provided for a six-year abstention from construction of heavy cruisers and bound the signatories to the exchange of information on proposed new construction.

NEUTRALITY

One of the few legislative matters mentioned in the President's opening message was neutrality. This was followed by Administration efforts to have Congress enact a permanent neutrality law, which was abandoned when it became evident there would be prolonged debate. Accordingly, the resolution forced on the Administration in 1935 was continued until 1937, with additions. The new resolution was adopted by the House Feb. 17, 353 (273D, 78R, 2FL) to 27 (11D, 9R, 7P). It was adopted by the Senate without a record vote the next day and signed by the President Feb. 28, a day before the previous year's resolution expired. Various efforts were made in the Senate to insert features desired in the Administration's permanent bill, but all failed. An amendment to include goods which might be used for war purposes was rejected without a roll call. An amendment to empower the President to declare that war trade be car-

ried at the risk of the trader was rejected, 18 (13D, 3R, 1FL, 1P) to 55 (40D, 15R). An amendment to consider the matter further in this session was rejected, 16 (9D, 7R) to 61 (46D, 15R). It seems probable that most of these votes were a result of parliamentary exigencies rather than consideration of the issues.

The act, as approved, provides that whenever the President shall find that a state of war exists between two foreign states, he shall proclaim the fact. After proclamation, it becomes unlawful to export arms, ammunition, or implements of war from any place in the United States or its possessions to any port of such belligerent states or to any neutral port for transshipment to a warring country. The President may by proclamation enumerate the arms or other goods concerned. It is mandatory on the President to extend this embargo to other countries which enter into the war.

One of the additions to the 1935 act provides that, after proclamation of war, it shall be unlawful for any person within the United States to purchase, sell and exchange bonds or other securities or obligations of any such government, issued after the proclamation, or to grant any loan or credit to such government or person acting in its behalf. The President may make an exception of ordinary commercial credits. Indebtedness existing before the proclamation may be renewed or adjusted.

American vessels are prohibited from carrying implements of war to belligerents or for transshipment to belligerents. The United States may not be used as a base for supplying implements of war to belligerents. American citizens are warned that they travel on belligerents' vessels only at their own risk. The other addition stipulates that the act shall not apply to a republic in the Western Hemisphere engaged in war against a non-American state if the American republic is not cooperating with a non-American state in such war.

A minor act amended the Navy Parity Act of 1934 which limits profit on naval shipbuilding to 10% of the

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contract price so that it would apply to the aggregate of contracts of any one company.

POWER

The Norris Rayburn Rural Electrification bill was passed by both Houses without record votes and signed by the President May 20. It made a permanent rural electrification agency, to be headed by a presidentially appointed administrator at \$10,000 a year. This administrator is empowered to make loans for rural electrification and furnishing of electricity to persons in rural districts without supply from a central station. He is also authorized to conduct researches along this line.

A ten-year program of loans totaling \$410,000,000 to aid farm groups and private companies in furnishing electricity in rural areas is set up. The Reconstruction Finance Corporation, upon request of the administrator, approved by the President, is directed to loan \$50,000,000 for the fiscal year 1937. After that the Treasury is to appropriate \$40,000,000 annually. Half of the sums thus made available shall be allotted for loans in the several States in the proportion which the number of their farms not receiving central station electric power bears to the total number of such farms in the United States. The other half is available for loans without allotment.

The administrator is also authorized to make loans to persons, corporations, governmental bodies, and cooperative, non-profit, or limited-dividend associations for financing generating plants, transmission and distribution systems for furnishing electric energy to rural areas not otherwise supplied. All loans shall be self-liquidating within twenty-five years and bear interest at the rate of United States government loans. Wiring, appliance, and equipment loans are also authorized. A non-partisan administration and a merit system in selection and promotion of employees is prescribed.

An act, approved March 3, continues the Electric Home and Farm Authority until Feb. 1, 1937, or such

earlier date as the President may order.

RELIEF

Puerto Rico.—An act, approved Feb. 11, provides that funds segregated for Puerto Rico out of the Emergency Relief Appropriation Act of 1935 shall constitute a special fund to increase employment in Puerto Rico, until 1940. The unobligated balance of processing taxes collected on Puerto Rican sugar may be assigned to this fund. Ten million dollars may be set aside for insurance against hurricane.

Property Damage Loans.—An act, approved April 17, empowers the Reconstruction Finance Corporation to make loans directly to corporations, individuals, municipalities and so forth for the repair or construction of property damaged by catastrophes in 1935 or 1936. The aggregate amount of such loans is limited to \$50,000,000. The National Housing Administrator is empowered to insure banks, trust companies, personal finance companies, mortgage companies, building and loan associations, installment lending companies and so forth against losses on credits and loans for rebuilding property destroyed by various natural disasters in 1935 or 1936. Such insurance may be granted up to ten per cent of the total amount of credit. The total liability incurred by the National Housing Administrator may not, however, exceed \$100,000,000.

WPA Appropriations.—As we have already noted, a new appropriation of \$1,425,000,000 for continuation of WPA during the fiscal year 1937 was included in the first deficiency appropriation bill. There were strong denunciations of the program and many charges of politics in employment of the funds but they influenced few votes. The Republicans in their relatively recent role of protector of the States proposed that administration of relief be transferred to state and local boards. They lost in the House, 90 (5D, 85R) to 287 (271D, 6R, 3FL, 7P) and in the Senate, 14 (1D, 13R) to 57 (50D, 4R, 2FL, 1P). The bill was passed by the House

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May 11, 341 (269D, 62R, 3FL, 7P) to 38 (8D, 30R) and by the Senate June 1, 62 (51D, 8R, 2FL, 1P) to 14 (3D, 11R). The conference report was accepted by the House June 17 and by the Senate June 18.

Strong efforts were made to secure insertion of a provision earmarking \$700,000,000 of the work relief fund for PWA. The Administration did not back Secretary Ickes in this move, however, although a Senate compromise authorized \$300,000,000 for a PWA revolving fund. A vote of confidence was given the Resettlement administration when the Senate voted down, 28 (16D, 12R) to 38 (31D, 4R, 2FL, 1P), a motion to strike out rural rehabilitation.

The act, as approved by the President on June 22, appropriated \$2,375,000 for certain deficiencies. All of the \$1,425,000,000 to be used for relief and work relief shall be used "in the discretion and under the direction of the President," together with unexpended balances of previous relief appropriations, which remain available until June 30, 1936. This appropriation shall be available for Federal and non-Federal projects in amounts not to exceed the following:

Highways, roads and streets....	\$413,250,000
Public buildings.....	156,750,000
Parks and recreational facilities.....	156,750,000
Public utilities.....	171,000,000
Flood control and conservation.....	128,500,000
Assistance for "white collar" unemployed.....	85,500,000
Miscellaneous work projects....	75,050,000
National Youth Administration	71,250,000
Loans and relief to farmers and livestock growers.....	85,500,000

The amounts in each of these categories may be increased by transfers from unexpended balances and by an amount exceeding 15% by transfer from one item to another.

Work Relief Employment.—Employment of aliens illegally within the United States on work relief projects is prohibited and departments are instructed to make "every reasonable effort" to prevent such employment. No Federal project shall be undertaken until an amount adequate for completion has been allocated to it. Appointments to any Federal positions advisory to a state administration

shall be made from *bona fide* residents of the State so far as possible. Rates of pay shall be not less than the prevailing rate as determined by the WPA. The bitter fight of the preceding year on this point was avoided by the understanding that WPA would reduce hours of work where prevailing wages were too high. The President may determine rules of eligibility but those not on the relief rolls shall be given the same eligibility as those on the rolls. Bonus payments shall not be considered in determining eligibility for employment.

The Public Works Administrator is authorized to use not more than \$300,000,000 for financing public works projects which can be substantially completed before July 1, 1938. Provision must be made for financing the entire cost. The grant may not exceed 45% of the cost of the project.

SECURITIES

The growing feeling that the Securities Exchange Commission is one of the most effective of New Deal agencies was reflected in a complete lack of opposition to the Unlisted Securities Trading Act which was approved May 27. This act amended the Securities Exchange Act of 1934 to provide for continued trading in unlisted securities on registered exchanges. The privilege would otherwise have expired on June 1, 1936. Trading is allowed in three kinds of unlisted securities: (a) Securities which were admitted to unlisted trading privileges prior to March 1, 1934, and have enjoyed these privileges continuously since then. Exchanges are required to reapply for continued trading in such securities. (b) Securities already listed and registered on another national securities Exchange. (c) Securities on which information equivalent to that for listed and registered securities is available, either from a registration statement and periodic reports or from data filed under the Securities Exchange Act of 1934 or the Securities Act of 1933.

Another provision of the act requires any Exchange wishing to admit a security in (b) or (c) to unlisted trading to prove to the Securi-

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ties Exchange Commission that there is sufficient distribution of and demand for the security in the vicinity of the Exchange concerned.

The Securities Exchange Act of 1934 is amended to require any person registering under the act of 1933 to file an undertaking to keep the information in the registration statement current by submission of periodic reports similar to those required by the Securities Act. This provision may be used in cases where the total offering price of the issue plus the total value of all other issues of the same class outstanding, figured on the basis of the offering price, amounts to \$2,000,000 or more. The provision remains in effect in cases where the value of the securities, figured on this basis, is as much as \$1,000,000. Under certain conditions securities falling under this privilege will be eligible for unlisted trading privileges on national securities exchanges. Still another provision of the act further utilizes the favored Federal device of registration, dealing with the registration of over-the-counter brokers and dealers.

PANAMA CANAL TOLLS

A bill to revise the tolls on the Panama Canal was in effect defeated when the Senate, on March 12, adopted 35 to 31 an amendment providing for the creation of a commission to study the matter. Another act, approved May 1, directs the Governor of the Panama Canal to investigate ways and means of increasing the capacity of the Canal for future needs of inter-oceanic shipping. Special authority is given to prepare designs and approximate cost estimates of new structures.

MERCHANT MARINE

One of the bitterest struggles of the session centered around the bill to substitute direct ship subsidies for the postal subsidies now in use. Postmaster General Farley in his efforts to eliminate the postal deficit had already segregated this item in the budget. On March 4, the President recommended legal separation. It will be recalled that a merchant marine

subsidy bill had been introduced and debated in the first session.

In the second session competing subsidy bills were contested in the Senate Commerce Committee and a compromise not found until May 18. This bill was taken up in the Senate a month later and passed June 19. It would not have passed the House had it not been for the unusual procedure referred to above. Senators filibustered against the Treasury and Post Office appropriations bill until the House accepted the subsidy bill in Senate form. This situation forced the House to capitulate on June 20.

The act as passed and approved by the President on June 29 declared it to be the policy of the United States to encourage development and maintenance of an American merchant marine large enough to carry domestic water commerce and a substantial portion of foreign commerce and capable of serving as a naval and military auxiliary in a national emergency. A new agency, the United States Maritime Commission (5 members, appointed by President, \$12,000 each), is created by the act.

The Merchant Fleet Corporation of the United States Shipping Board is dissolved and all its existing contracted obligations are assumed by the United States. All the powers vested in the United States Shipping Board by various acts (subsequently transferred to the Department of Commerce) are transferred to the Maritime Commission. Future construction loans under the Merchant Marine Act of 1920 are prohibited.

An anti-monopoly provision makes it unlawful for any common carrier by water to prevent any other carrier from serving any port located on an improvement project authorized by Congress at the same rates charged at the nearest port already regularly served by it.

The Commission is directed to survey the American merchant marine to determine need for additions and replacements and to develop a long range program for building up a well balanced fleet. It is authorized to investigate employment and wage

conditions in oceangoing shipping and to incorporate in its subsidy and private charter operation contracts, minimum manning scales, minimum wage scales and reasonable working conditions for officers and crew. It will be noted that this technique of social legislation is very similar to that employed in the Walsh Healy Government Contracts bill.

OCEAN MAIL CONTRACTS

Powers vested in the Postmaster General with respect to existing ocean mail contracts are transferred to the Maritime Commission. The latter is authorized and directed to consider applications for construction—differential and operating—differential subsidies and to grant them under certain conditions. Construction subsidies may be from $33\frac{1}{3}\%$ to 50% and operators may receive actual differentials between costs of American and competing foreign ships. In cases where the aids afforded are not sufficient the Commission may arrange for the construction of such new vessels as are required to carry out the objects of the act, and either to charter them or to operate them itself.

STEAMBOAT INSPECTION

Recent ship disasters resulted in the Steamboat Inspection Act, approved May 27. The Bureau of Navigation and Steamboat Inspection in the Department of Commerce is renamed the "Bureau of Marine Inspection and Navigation." The Secretary of Commerce is directed to prescribe rules for investigation of marine casualties involving loss of life in order to determine whether incompetence or neglect of any licensed officer, pilot, seaman, employee, owner, or agent of the vessel involved, or any official inspector, contributed to the cause of casualty. A marine casualty investigation board is created and provision made for increased efficiency in the administration of steamboat inspection laws.

FEDERAL-STATE TAX RELATIONS

One aspect of the strained Federal-state tax relations reached Congress when the Supreme Court held that existing legislation did not specifically except R.F.C.-owned bank stock from state taxation. To forestall levy of a tax by Maryland, a bill was introduced to make such exemption. It passed the Senate Feb. 24, 38 (37D, 1R) to 28 (12D, 15R, 1FL). The House voted the bill down, 164-172, Feb. 25 but approved it, 218 (184D, 34R) to 144 (82D, 52R, 3FL, 7P), March 19, after Chairman Jones of the Reconstruction Finance Corporation pointed out that the R.F.C. would lose \$5,500,000 in taxes during the current year. The act as passed also stipulated that R.F.C. loans should not exceed $3\frac{1}{2}\%$ per cent annually if the rate charged debtors of the banks did not exceed $4\frac{1}{2}\%$ per cent annually.

A bill to exempt publicly owned interstate highway bridges from state and local taxation was passed by both houses on the last night of the session.

REVENUE ACT OF 1936

The major legislation of the session was the Revenue Act of 1936. Sharp changes in the revenue structure were necessitated by the passage of the bonus bill and the processing taxes of the Agricultural Adjustment Act, leaving a number of contracts yet to pay. The President, in a message of March 3, pointed out the need and suggested three sources of revenue to Congress. They included (1) a continuing tax on undistributed corporation profits, to be substituted for existing corporation income tax, capital stock tax and excess profits tax, expected to yield \$620,000,000 annually more; (2) a temporary tax on windfalls received by processors; (3) a temporary tax on processing of a broader range of commodities. The two temporary taxes were expected to yield \$172,000,000 annually.

The House Ways and Means Committee rejected the new processing taxes but did frame a complicated tax on corporation net income, graduated up to $42\frac{1}{2}\%$, and imposing an

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"unjust enrichment tax" of 80% on evaders of A.A.A. processing taxes. The House passed this bill after apathetic consideration April 20 by a vote of 267 (253D, 4R, 3FL, 7P) to 93 (11D, 82R).

The Senate was much more aggressive. At the hearings of the finance committee the bill was generally opposed—especially the undivided profits tax feature. Efforts were made to exert White House pressure but the conservatives on the committee reported out a different bill. It recommended (1) increase in the graduated normal corporation income tax from 12½ to 15% to 15½ to 18%, expected yield \$215,000,000; (2) a flat surtax of 7% on undistributed corporation earnings, \$217,000,000; (3) the 4 per cent normal individual income tax to be extended to dividends, \$90,000,000; (4) a one per cent increase in surtaxes on individual incomes from \$6,000 to \$50,000, \$50,000,000; (5) revision of rates to encourage liquidation of personal holding companies, \$33,000,000; (6) excises of 2% to 4¼% on certain imports, \$10,000,000; (7) Retention of capital stock and excess profits taxes.

This revision was approved by the Senate on June 5, 38 (36D, 1R, 1P) to 24 (9D, 13R, 2FL). It differed greatly from the Treasury-House proposals and much was left to the conference committee. The latter disagreed violently and it is suspected that Treasury and Congressional experts did most of the leading. The conference report, discussed more fully below, was accepted by the House June 19, 223 (213D, 4R, 3P, 3FL) to 99 (22D, 77R) and by the Senate June 20, 42 (35D, 4R, 2FL, 1P) to 29 (18D, 11R). It was approved by the President June 22.

In its final form the act attempts to raise an estimated \$785,000,000 additional revenue during the first year of operation. The normal income tax rate (4%) and surtax rates (4% to 75%) on individuals are continued. The normal tax net income of corporation is subjected to a graduated tax ranging from 8% to 15%, the latter applying to normal tax net

incomes above \$40,000. In addition to this there is a graduated surtax on undistributed net income of every corporation. The percentage rates vary from 7 to 27, and the graduation is on the basis of percentage undistributed not of net income, except that, if the adjusted income is less than \$50,000, a specific credit is allowed. Banks, corporations in receivership, certain insurance companies, and other special corporations (a short list) are exempted from the undistributed profits surtax. Levies are made on the net income of every corporation formed for the purpose of accumulating earnings instead of being divided or distributed. These levies of 25% below \$100,000 and 35% above \$100,000 retained net income in the case of corporations not subject to the surtax. The same figures are 15% and 20% on such corporations when subject to the undistributed profits surtax.

A flat tax of 15% on income derived in the United States is laid on foreign corporations not doing business here, except that it is 10% on dividends. Foreign corporations doing business here would pay 22% on their American income.

Personal holding companies are required to pay surtaxes on undistributed adjusted net income, ranging from 8% to 48%, the latter on the amount in excess of \$1,000,000.

The capital stock tax is lowered from \$1.40 to \$1 per \$1,000. The House 80% tax on "unjust enrichment" also appears. Dividends are made subject to the normal tax. A flat normal tax of 15% is levied on banks, trust companies, and insurance companies which are exempted from the surtax on undistributed net profits. Special treatment is given to common trust funds operated by banks and to certain classes of investment trusts. A number of provisions to facilitate tax administration are included. In this connection, another bill, approved April 10, provides fines of \$5 on individuals and \$10 on corporations failing to file copies of income tax returns.

FEDERAL ADMINISTRATIVE AGENCIES

VETERANS' BONUS

When Congress met, the bonus was on the agenda from the last session, and it was generally felt that as this was campaign year it would not be defeated. The three leading veterans' organizations endorsed a bill for immediate cash payment. It was passed by the House, Jan. 10, 356 (277D, 70R, 3FL, 6P) to 59 (28D, 31R) and by the Senate Jan. 20, 74 (56D, 15R, 2FL, 1P) to 16 (9D, 7R). The House bill had been revised by the Senate to provide for payment in 10 years 3% bonds cashable at par on demand. A bonus-inflation amendment was rejected in the Senate, 27 (22D, 3R, 2FL) to 64 (44D, 19R, 1P). The President vetoed the bill in a laconic message referring to the previous year's veto and was promptly overridden in the House, 325 (249D, 66R, 3FL, 7P) to 61 (32D, 29R) and in the Senate, 76 (57D, 16R, 2FL, 1P) to 19 (12D, 7R). It was evident that the Administration was making no real fight against the bill, perhaps because the battle was hopeless, perhaps because it was campaign year.

In final form, the act declares the adjusted service certificates to be im-

mediately payable in the amount of the face value of the certificate less any loans outstanding. No charge is to be made for any interest on such loans after Sept. 30, 1931. Certification of the amounts payable is to be made by the Administrator of Veterans' Affairs to the Secretary of the Treasury. A means is provided by which the Administrator may discharge liens against certificates held by banks and trust companies.

The manner by which the Secretary of the Treasury is to make payment is prescribed in detail. Bonds are to be issued in denominations of \$50 or multiples thereof. Odd amounts are to be paid in cash. Bonds are to be dated June 15 and shall run for nine years but shall be redeemable at any time at the option of the veteran. They shall not be transferable or assignable and shall be subject to any legal process. Interest is to accrue at the rate of 3% but no interest will be paid on bonds redeemed before June 15, 1937. Adjusted service certificates held by the government life insurance fund may be exchanged for bonds in the same amount.

FEDERAL ADMINISTRATIVE AGENCIES

By JOHN A. TILLEMA

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UNITED STATES MARITIME COMMISSION

Absorption of U. S. Shipping Board.—The outstanding administrative change of the year 1936 was the establishment of the United States Maritime Commission by an act of Congress approved June 29, 1936. The act became effective Oct. 26, 1936, and it vests in the new Commission the powers and duties of the former United States Shipping Board under the Shipping Act of 1916, the Merchant Marine Act of 1920, the Merchant Marine Act of 1928, and the Intercoastal Shipping Act of 1933. The Maritime Commission received the transfer of the prop-

erty of the United States Shipping Board Merchant Fleet Corporation.

Merchant Marine Policy.—The policy laid down in the Merchant Marine Act of 1936 is to provide for the national defense and to develop the foreign and domestic commerce of the United States. To achieve these ends it is necessary that the United States have a Merchant Marine "(a) sufficient to carry its domestic water-borne commerce and a substantial portion of the water-borne export and import foreign commerce of the United States, and to provide shipping service on all routes essential for maintaining the flow of such domestic and foreign water-

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borne commerce at all times, (b) capable of serving as a naval and military auxiliary in time of war or national emergency, (c) owned and operated under the United States flag by citizens of the United States in so far as may be practicable, and (d) composed of the best equipped, safest and most suitable types of vessels, constructed in the United States and manned with a trained and efficient citizen personnel."

Organization.—The Commission is to be composed of five members appointed by the President with the advice and consent of the Senate. Not more than three of the Commissioners are to be of the same political party. The term of office of the original appointees is fixed at 2, 3, 4, 5 and 6 years respectively. The staffs of the United States Shipping Board Bureau and of the United States Shipping Board Merchant Fleet Corporation were transferred to the Commission. Provision is made to give the employees civil service status. The act setting up the Maritime Commission contemplates a director of each not to exceed five divisions.

Powers and Duties.—The Commission is directed to cooperate closely with the Navy Department to insure the speedy adaptation of the Merchant Marine to national defense purposes. It is also directed to investigate the advisability of enacting legislation authorizing it, in economic and commercial emergencies, to aid farmers and cotton, coal, lumber and cement producers in the United States in the transportation of their products by reducing rates, by supplying additional tonnage to American operators or by the operation of vessels directly by the Commission. The Commission is expected to devise means by which importers and exporters of the United States can be induced to give preference to vessels of United States registry and to secure the construction of express liner or superliner vessels comparable to the best of other nations. The Commission is also to investigate discrimination as to rates and services as to cargo originating in the United States. Two years from

the date of the act the President is authorized by executive order to transfer all regulatory functions of the Maritime Commission to the Interstate Commerce Commission. Officials and employees of the United States on official business are required to travel on ships of the United States registry where they are available. Such ships are subject to the requisition of the President of the United States during any national emergency. The owner in such case is to be compensated.

Seamen's Wages and Working Conditions.—The Commission is to investigate employment and wage conditions in the United States Merchant Marine and is directed to incorporate in contracts authorized under the act maximum manning scales and minimum wage scales and suitable working conditions for officers and crews on all vessels receiving subsidies for operation. All officers and crews of vessels receiving subsidies for construction or operation must be citizens of the United States.

Mail Contracts.—Contracts by the Postmaster General for carriage of ocean mail are to be terminated after June 30, 1937. Holders of such contracts are authorized to file applications with the Maritime Commission for the adjustment of all rights under such contracts subject to appeal by the Attorney General of the United States. A construction or operation differential contract may be substituted in whole or in part for an existing contract. In the event of failure to make an adjustment the parties may sue the United States in the Court of Claims before Jan. 1, 1938. The powers and duties formerly vested in the Postmaster General regarding ocean mail contracts are transferred to the Commission. Mails are to be carried in the future on ships of United States registry when practicable.

Construction Subsidies.—In order to encourage the building of vessels of United States registry in American ship yards construction differential subsidies are available. After approval of the plans and specifica-

FEDERAL ADMINISTRATIVE AGENCIES

tions by the Maritime Commission and the Secretary of the Navy, the Commission may enter into contracts with bidders for the construction of vessels. The applicants may purchase such vessels at prices representing the estimated cost of building them in foreign ship yards. The vessels are to be constructed with funds under the control of the Commission. The construction differential subsidy may not exceed $33\frac{1}{3}$ per cent of the cost except where conclusive evidence indicates that the differential cost of construction is greater than that amount, but in no case may the allowance exceed 50 per cent. Applicants purchasing vessels from the Commission must pay 25 per cent down and the balance within 20 years after delivery. The Commission takes a first preferred ship mortgage for the balance of the purchase price bearing interest at the rate of $3\frac{1}{2}$ per cent. If an eligible applicant prefers to finance the construction of a vessel he may, on approval of the Commission, enter into a construction contract. The Commission may pay to the shipbuilder a construction subsidy.

The act encourages shipbuilding on the Pacific Coast. The Commission may have ships built in a United States navy yard if the bids for construction in privately owned yards in the United States are collusive or excessive. All subsidized construction must take place in ship yards within the continental limits of the United States.

Operating differential subsidies are available to citizens of the United States operating ships of American registry when the Commission determines that aid is needed for ship operators in foreign commerce. Applicants for operating differential subsidies must make full disclosure as to ownership, use, costs, etc. All contracts relating to operating subsidies or charters are to require the books of the contractor to be kept in accordance with regulations of the Commission. They may be required to file balance sheets, financial statements and other data on notice.

Chartering.—The act provides for

the chartering of ships owned by the United States to private operators, but it is the policy of the act to encourage private ownership and operation of steamship lines.

Officer and Employee Salaries.—No officer or employee of a subsidized line or a charterer under the provisions of the act is permitted to receive a compensation or salary in excess of \$25,000 annually. If a contractor is in default on a note or other obligation, the Commission has the right to supervise the compensation of all officers and employees. The provisions of the act are intended primarily for vessels to be operated in foreign trade and not for coastwise or intercoastal or domestic water transportation.

FEDERAL BOARD OF SURVEYS AND MAPS

This Board was established by executive order Jan. 4, 1936, to replace the Board of Surveys and Maps of the Federal Government established Dec. 30, 1919. The Board is composed of 24 members each of whom is a member of a Federal bureau concerned with maps and surveys. Appointments to the Board are made by bureau chiefs. Appointees are to receive no additional compensation for serving on the Board. An advisory council composed of representatives of non-governmental organizations, clubs and associations submits recommendations to the Board for consideration at its meetings. This advisory council represents the map-using public. Meetings of the Board are held on the second Tuesday of each month.

The Board makes recommendations to the executive departments, independent establishments and the President for the purpose of coordinating all map-making and survey activities of the Federal Government, and for the settlement of problems arising in connection with surveys and maps. A central information office has been established in the United States Geological Survey for the purpose of collecting, classifying and furnishing information concerning all map and survey data available.

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CHANGES RESULTING FROM THE U. S. SUPREME COURT A.A.A. DECISION

On January 6, 1936 the act creating the Agricultural Adjustment Administration was declared unconstitutional by the Supreme Court of the United States. The decision, however, did not abrogate certain functions exercised by the Department of Agriculture under the Agricultural Act, such as the establishment and enforcement of marketing agreements and orders, surplus removal activities, loans on agricultural commodities, eradication of diseased animals and the establishment and allotment of quotas for the importation of sugar.

CHANGES IN THE FEDERAL RESERVE BOARD

A change was made in the Board of Governors of the Federal Reserve system which went into effect Feb. 1, 1936. Under the previous laws the Secretary of the Treasury and the Comptroller of the Currency were *ex-officio* members of the Board. These members have been taken off and another member added. The Board now contains seven members no two of whom may reside in the same Federal Reserve District.

On March 1, 1936 each member of the Board of Governors became a member of the Federal Open Market Committee. This Committee contains in addition to the Board of Governors of the Federal Reserve System five representatives of the Federal Reserve Board elected annually by the directors of certain specified banks. The open market operations of the Federal Reserve Banks are now conducted under regulations made by the Federal Open Market Committee, and no Federal Reserve Bank may engage or decline to engage in open market operations except under the regulations and supervision of the Committee.

COMMITTEE OF INDUSTRIAL ANALYSIS

On March 21, 1936, the President created the Committee of Industrial Analysis with the Secretary of Commerce as Chairman to complete the

work of the Division of Business Cooperation.

NATIONAL MEDIATION BOARD

On April 10, 1936 an act of Congress was approved which amended the Railway Labor Act to extend the jurisdiction of the National Mediation Board to carriers by air engaged in interstate commerce or under mail contract. The purpose of the National Mediation Board is to provide for the prompt settlement of disputes between carriers and their employees. The Board is composed of three members appointed by the President with the advice and consent of the Senate.

NATIONAL BITUMINOUS COAL COMMISSION

The decision of the United States Supreme Court in the case of *Carter vs. Carter Coal Company et al.*, rendered May 18, 1936, limited the activities of the National Bituminous Coal Commission to Sections 16 and 18 of the Bituminous Coal Conservation Act of Aug. 30, 1936. The Commission is required to study and report upon problems confronting the coal industry, including the increase of the uses of bituminous coal, problems of transportation and operation.

EMERGENCY CROP AND FEED LOANS

An Executive order of Feb. 28, 1936 authorized the Governor of the Farm Credit Administration to make loans during 1936 from a fund of \$30,000,000 to farmers for the production and harvesting of crops and for feed for live stock. Crop and feed loans were made only to applicants who were unable to procure credit from other sources. A supplementary Executive order of Aug. 21, 1936 provided that the amount which might be lent to any borrower should not exceed \$200 except that \$400 might be lent for the planting of winter wheat. Preference was to be given to the application of farmers whose cash requirements were small. No loan was to be made for a sum less than \$10. All loans were made in multiples of \$5. Notes bear interest of 5½ per cent which is deducted at the time the loans are made.

THE SUPREME COURT AND CONSTITUTIONAL LAW

THE SUPREME COURT AND CONSTITUTIONAL LAW

BY THOMAS REED POWELL

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MAJOR CASES AND COURT DIVISIONS

In the work of the Supreme Court for the term begun in October, 1935 and ended in June, 1936, four cases were of transcendent interest. In only one of these was the position of the state or the nation sustained. This is the case in which all the Justices but Mr. Justice McReynolds sanctioned the construction of the Wilson Dam on the Tennessee River, the sale of electric energy from the works developed thereon, the acquisition from a power company of transmission lines leading to the generating plant, and a contract for the interchange of power between the company and the Tennessee Valley Authority. Had Mr. Justice McReynolds not agreed with four Justices that the constitutional issue was properly raised in a suit by preferred stockholders of the private power company against the corporation to enjoin it from entering into the contract with the governmental agency, the decision could not have been rendered. The dissenters on the jurisdictional issue were Justices Brandeis, Stone, Roberts and Cardozo.

The other three major cases condemned the Federal Coal Conservation and Agricultural Adjustment Acts and the New York minimum wage law. Mr. Justice Roberts was with the majority in all three cases. Mr. Chief Justice Hughes concurred only in condemning the Agricultural Adjustment Act, though he agreed that the Coal Conservation Act could not be applied to the regulation of the hours and wages of coal miners. On this point the other three of the minority did not express themselves. They agreed with the Chief Justice that the act could be sustained in its provisions for regulating the price of coal sold in interstate commerce even though the labor provisions were unconstitutional. The majority did not

consider the price regulation, but insisted that the whole act must fall with the fall of the labor provisions. Justices Brandeis, Stone and Cardozo dissented in all three cases. They were joined by the Chief Justice in dissenting also in another case that denied the power of the United States to apply the bankruptcy power to governmental subdivisions of the States. In two tax cases, the Chief Justice was also with these three in dissent.

There were ten tax cases in which both the Chief Justice and Mr. Justice Roberts helped to make the majority. In two of them, Justices Brandeis, Stone and Cardozo confined their concurrence to the result. In all the rest they dissented, except one in which Mr. Justice Stone did not sit and in which Justices Brandeis and Cardozo dissented alone. These three also dissented together in a case condemning a price differential in New York's milk regulation, a case denying the application of the commodities clause of the Hepburn Act to a short railroad owned by a corporation controlled by an industrial concern, and a case denying the power of the Securities and Exchange Commission to compel testimony from one who had withdrawn his application for approval of an issue of securities. Thus the concurrence of the Chief Justice with the three chief dissenters is confined chiefly to cases in which large and novel issues of wide public interest are involved. How the scales of the Court are tipped may be suggested by the fact that in only two cases were Justices Van Devanter, McReynolds, Sutherland and Butler together in dissent. One sanctioned an application of the Federal estate tax, and the other approved a price differential in the New York milk regulation.

Two unanimous decisions, to be reviewed later, have a significance beyond their primary reach. One for-

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bids Congress to transform state banking institutions into national institutions against the will of the State, and the other permits Congress to withdraw from the protection of the commerce clause the products of prison labor, thereby permitting the state of destination to deal with them as it deals with similar goods of local origin. Mention should be made of two unanimous condemnations of state action suppressing newspapers by a ruinous tax, *Grossjean v. American Press Co.*, 297 U.S. 233 (1936), and convicting an accused solely on a confession obtained by torture, *Brown v. Mississippi*, 297 U.S. 278 (1936). Many who criticize other judicial negatives feel kindly toward these. The work of the Court is not to be judged solely by the few decisions selected for treatment here. The cases chosen for extended notice are those which have aroused the widest public interest and which have a probable or possible reach far beyond the condemnation or approval of the particular statute before the Court. In presenting these cases, it has seemed best to deal with them as units rather than to tear them into bits and gather the pieces into distinct constitutional compartments.

THE AGRICULTURAL ADJUSTMENT ACT

United States v. Butler, 297 U.S. 1 (1936), by a vote of six to three, Justices Brandeis, Stone and Cardozo dissenting, saved a cotton mill from paying a tax on the processing of cotton, not because of any intrinsic defect in the tax itself, but because the demand for the money was part of a plan for controlling agricultural production, which was declared to be not within the delegated powers of the Federal Government and therefore an encroachment upon the reserved powers of the States. Thus the controversy was as to the spending power rather than the taxing power. There was a preliminary question as to whether the taxpayer could question the use of the proceeds of the tax. Into this question the minority opinion did not enter. For the majority, Mr. Justice Roberts

differentiated a case in which a taxpayer sought unsuccessfully to restrain an expenditure without resisting any tax levied on him and said that in the case at bar "the respondents who are called upon to pay moneys as taxes, resist the exaction as a step in an unauthorized plan." He emphasized the interrelation between the payments for crop curtailment and the selection of the commodities subjected to the processing tax and the rates of levy thereof. While invoking the fact that the tax and the plan for agricultural control were in a single statute, he called it a "novel suggestion that two statutes enacted as part of a single scheme should be tested as if they were distinct and unrelated."

While professedly concerned at the moment merely with the right of the processor to raise the issue, Mr. Justice Roberts points the way to his ultimate substantive conclusion when he says:

The tax can only be sustained by ignoring the avowed purpose and operation of the act, and holding it a measure merely laying an excise upon processors to raise revenue for the support of government. Beyond cavil the sole object of the legislation is to restore the purchasing power of agricultural products to a parity with that prevailing in an earlier day; to take money from the processor and bestow it upon farmers who will reduce their acreage for the accomplishment of the proposed end, and, meanwhile to aid these farmers during the period required to bring the prices of their crops to the desired level.

A little later he adds:

It is inaccurate and misleading to speak of the exaction from processors prescribed by the challenged act as a tax, or to say that as a tax it is subject to no infirmity. A tax, in the general understanding of the term, and as used in the Constitution, signifies an exaction for the support of the Government. The word has never

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been thought to connote the expropriation of money from one group for the benefit of another. We may concede that the latter sort of imposition is constitutional when imposed to effectuate regulation of a matter in which both groups are interested and in respect of which there is a power of legislative regulation. But manifestly no justification for it can be found unless as an integral part of such regulation. The exaction cannot be wrested out of its setting, denominated an excise for raising revenue and legalized by ignoring its purpose as a mere instrumentality for bringing about a desired end. To do this would be to shut our eyes to what all others than we can see and understand.

We conclude that the act is one regulating agricultural production; that the tax is a mere incident of such regulation and that the respondents have standing to challenge the legality of the exaction.

In the next sentence the opinion goes on to say that "it does not follow that as the act is not an exertion of the taxing power and the exaction not a true tax, the statute is void or the exaction uncollectible." The exaction, though not a true tax, is not void if it is incident to a scheme of regulation within some other national power. The only power adduced on behalf of the government is the power to spend for the general welfare. Into this question the opinion then goes after pointing out that the Court has no "power to overrule or control the action of the people's representatives," but "has only one duty,—to lay the article of the Constitution which is invoked beside the statute which is challenged and to decide whether the latter squares with the former." In discussing the general welfare provision of the taxing and spending clause, Mr. Justice Roberts says that this does not grant a power to legislate for the general welfare but only a power to spend for the general welfare. He accepts the Hamiltonian view that this spending power is not

limited by the clauses that limit the direct regulatory powers, but he treats the general welfare clause as a limitation on the purposes for which money raised by national taxation may be spent.

After speaking of the presumption in favor of Congressional action and the broad range of legislative discretion and the requirement on the objector to show "that by no reasonable possibility can the challenged legislation fall within the wide range of discretion permitted to the Congress," the opinion proceeds:

We are not now required to ascertain the scope of the phrase "general welfare of the United States" or to determine whether an appropriation in aid of agriculture falls within it. Wholly apart from that question, another principle embedded in our Constitution prohibits the enforcement of the Agricultural Adjustment Act. The act invades the reserved rights of the states. It is a statutory plan to regulate and control agricultural production, a matter beyond the powers delegated to the federal government. The Tax, the appropriation of the funds raised, and the direction for their disbursement, are but parts of the plan. They are but means to an unconstitutional end.

From the accepted doctrine that the United States is a government of delegated powers, it follows that those not expressly granted, or reasonably to be implied from such as are conferred, are reserved to the states or to the people. To forestall any suggestion to the contrary, the Tenth Amendment was adopted. The same proposition, otherwise stated, is that powers not granted are prohibited. None to regulate agricultural production is given, and therefore legislation by Congress for that purpose is forbidden.

It is an established principle that the attainment of a prohibited end may not be accomplished under the pretext of the exertion of powers which are granted.

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This restriction applies to the taxing power, as is established by the cases that have condemned suppressive taxes imposed to prevent child labor, trading in grain futures and the sale of liquor in violation of state law. These decisions, says the opinion, "demonstrate that Congress could not, under the pretext of raising revenue, lay a tax on processors who refuse to pay a certain price for cotton and exempt those who agree so to do, with the purpose of benefiting producers." With this as a background, the opinion then asks the question: "If the taxing power may not be used as the instrument to enforce a regulation of matters of state concern with respect to which the Congress has no authority to interfere, may it, as in the present case, be employed to raise the money necessary to purchase a compliance which the Congress is powerless to command?"

In proceeding to answer this question, Mr. Justice Roberts first denies the Government's contention that the farmer who chooses to join in the plan and take money for restricting production does so of his own free will and not because of compulsion. On this point he says:

The regulation is not in fact voluntary. The farmer, of course, may refuse to comply, but the price of such refusal is the loss of benefits. The amount offered is intended to be sufficient to exert pressure on him to agree to the proposed regulation. The power to confer or withhold unlimited benefits is the power to coerce or destroy. If the cotton grower elects not to accept the benefits, he will receive less for his crops; those who receive payments will be able to undersell him. The result may well be financial ruin. The coercive purpose and intent of the statute is not obscured by the fact that it has not been perfectly successful. It is pointed out that, because there still remained a minority whom the rental and benefit payments were insufficient to induce to surrender their independence of action, the Con-

gress has gone further and, in the Bankhead Cotton Act, used the taxing power in a more directly minatory fashion to compel submission. This progression only serves more fully to expose the coercive purpose of the so-called tax imposed by the present act. It is clear that the Department of Agriculture has properly described the plan as one to keep a non-coöperating minority in line. This is coercion by economic pressure. The asserted power of choice is illusory.

The opinion offers no details in support of its position that the cotton grower who does not reduce his acreage will get less for his crops and that others who do reduce their acreage can undersell those who do not and therefore ruin the farmer who uses his acres to the full. For the minority, Mr. Justice Stone puts the farmer's choice as one between money exclusively from larger crops or money from smaller crops plus money from government bounty. He puts the matter as follows:

Of the assertion that the payments to farmers are coercive, it is enough to say that no such contention is pressed by the taxpayer, and no such consequences were to be anticipated or appear to have resulted from the administration of the act. The suggestion of coercion finds no support in the record or in any data showing the actual operation of the Act. Threat of loss, not hope of gain, is the essence of economic coercion. Members of a long depressed industry have undoubtedly been tempted to curtail acreage by the hope of resulting better prices and by the proffered opportunity to obtain needed ready money. But there is nothing to indicate that those who accepted benefits were impelled by fear of lower prices if they did not accept, or that at any stage in the operation of the plan a farmer could say whether, apart from the certainty of cash payments at specified times, the advantage would lie with curtailment of pro-

duction plus compensation, rather than with the same or increased acreage plus the expected rise in prices which actually occurred.

The dissenting opinion then gives figures as to the number of cotton raisers who did not enter into the government plan for crop reduction in 1934 and 1935 and the consequent enactment of the coercive Bankhead Act which imposed a ruinous tax on the ginning of cotton in excess of prescribed quotas. Thus from the subsequent concededly coercive tax on prolific production, Mr. Justice Stone infers that the prior bounties were not coercive, while Mr. Justice Roberts infers a coercive purpose in the bounty plan because the succeeding suppressive tax was coercive. There was a coercive purpose even though the end was not fully attained. On this issue Mr. Justice Stone concludes by saying that "the presumption of constitutionality of a statute is not to be overturned by an assertion of its coercive effect which rests on nothing more substantial than groundless speculation."

While Mr. Justice Roberts will not yield on the issue of coercion, he is not satisfied to stand or fall on the acceptance or rejection of his analysis. He puts his broader position as follows:

But if the plan were one for purely voluntary co-operation it would stand no better so far as federal power is concerned. At best it is a scheme for purchasing with federal funds submission to federal regulation of a subject reserved to the states. It is said that Congress has the undoubted right to appropriate money to executive officers for expenditure under contracts between the government and individuals; that much of the total expenditures is so made. But appropriations and expenditures under contracts for proper governmental purposes cannot justify contracts which are not within federal power. And contracts for the reduction of acreage and the control of production are outside the range of that power.

An appropriation to be expended by the United States under contracts calling for violation of a state law clearly would offend the Constitution. Is a statute less objectionable which authorizes expenditure of federal moneys to induce action in a field in which the United States has no power to intermeddle? The Congress cannot invade state jurisdiction to compel individual action; no more can it purchase such action.

In dissenting, Mr. Justice Stone notes that the majority opinion does not declare that Congress may not authorize the expenditure of public money in aid of farmers and "does not deny that the expenditure of funds for the benefit of farmers and in aid of a program of curtailment of production of agricultural products, and thus of a supposedly better ordered national economy, is within the specifically granted power." Of the narrower basis of the decision that the government cannot make contracts to secure crop reduction, he says:

The Constitution requires that public funds shall be spent for a defined purpose, the promotion of the general welfare. Their expenditure usually involves payment on terms which will insure use by the selected recipients within the limits of the constitutional purpose. Expenditures would fail of their purpose and thus lose their constitutional sanction if the terms of payment were not such that by their influence on the action of the recipients the permitted end would be attained. The power of Congress to spend is inseparable from persuasion to action over which Congress has no legislative control. Congress may not command that the science of agriculture be taught in state universities. But if it would aid the teaching of that science by grants to state institutions, it is appropriate, if not necessary, that the grant be on the condition, incorporated in the Morrill Act, that it be used for the intended purpose. Similarly it

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would seem to be compliance with the Constitution, not violation of it, for the government to take and the university to give a contract that the grant would be so used. It makes no difference that there is a promise to do an act which the condition is calculated to induce. Condition and promise are alike valid since both are in furtherance of the national purpose for which the money is appropriated.

Somewhat later the dissenting opinion declares that "it is a contradiction in terms to say that there is a power to spend for the national welfare, while rejecting any power to impose conditions reasonably adapted to the attainment of the end which alone would justify the expenditure." Such a limitation is said to lead to absurd consequences, such as that the government may give seeds but not direct how they shall be planted, may give relief to sufferers from floods and tornadoes but not impose conditions to prevent disease or to induce the movement of population to safer or more sanitary areas. Such situations are distinguished by the majority by saying that "we are not here concerned with a conditional appropriation of money, nor with a provision that if certain conditions are not complied with the appropriation shall no longer be available." Congress is not here controlling the use of the money but is conditioning the grant of the money upon a promise of conduct with respect to matters wholly within state power. To the argument that Congress may give money to educational institutions and stipulate the sort of education for which the money may be used, it is answered that "an appropriation to an educational institution which by its terms is to become available only if the beneficiary enters into a contract to teach doctrines subversive of the Constitution is clearly bad."

The majority add illustrations of what they think Congress could do if it may do what it has done here. If Congress thought that processors were not sufficiently prosperous, it might tax producers and appropriate

the proceeds to the processors. Congress might regulate wages in local businesses by paying bounties to employers who agree to observe suggested standards. It might aid sugar refiners by taxing every sale of sugar and giving the proceeds to refiners who agree to maintain a certain price. It might put an excise on the manufacture of garments and devote the proceeds to manufacturers who agree to remove their plants from large cities. "A possible result of sustaining the claimed federal power would be that every business group which thought itself under-privileged might demand that a tax be laid on its vendors or vendees the proceeds to be appropriated to the redress of its deficiency of income." Of the specific possibilities suggested, it is said that they "are no more improbable than would the present act have been deemed a few years ago."

Mr. Justice Stone is not disturbed by this array. He says that the suggestion that the great governmental power of the purse "must now be curtailed by judicial fiat because it may be abused by unwise use hardly rises to the dignity of argument." "So," he adds, "may judicial power be abused." In elaboration, he concludes:

"The power to tax is the power to destroy," but we do not, for that reason, doubt its existence, or hold that its efficacy is to be restricted by its incidental or collateral effects upon the states. . . . The power to tax and spend is not without constitutional restraints. One restriction is that the purpose must be truly national. Another is that it may not be used to coerce action left to state control. Another is the conscience and patriotism of Congress and the Executive. "It must be remembered that legislators are the ultimate guardians of the liberties and welfare of the people in quite as great a degree as the courts."

A tortured construction of the Constitution is not to be justified by recourse to extreme examples of reckless congressional spending which might occur if courts could

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not prevent expenditures which, even if they could be thought to effect any national purpose, would be possible only by action of a legislature lost to all sense of public responsibility. Such suppositions are addressed to the mind accustomed to believe that it is the business of courts to sit in judgment on the wisdom of legislative action. Courts are not the only agency of government that must be assumed to have capacity to govern. Congress and the courts both unhappily may falter or be mistaken in the performance of their constitutional duty. But interpretation of our great charter of government which proceeds on any assumption that the responsibility for the preservation of our institutions is the exclusive concern of any one of the three branches of government, or that it alone can save them from destruction is far more likely, in the long run, "to obliterate the constituent members" of "an indestructible union of indestructible states" than the frank recognition that language, even of a constitution, may mean what it says: that the power to tax and spend includes the power to relieve a nation-wide economic maladjustment by conditional gifts of money.

THE COAL CONSERVATION ACT

The Bituminous Coal Conservation Act, commonly called the Guffey Act, sought, according to its title, to stabilize the bituminous coal-mining industry and to promote its interstate commerce. The act imposed a tax of 15 per cent on the value or price of coal at the mine, subject to a drawback of 90 per cent of the tax in favor of those who filed with the Coal Commission an acceptance of the code to be formulated by the commission. The Code authority was to fix the prices of coal sold in interstate commerce or in local commerce that directly and intimately affected interstate commerce. The act also created a Labor Board with the duty of prescribing for all code members a scale of hours and wages when such a scale had been agreed

upon by a designated majority of the producers and the miners. The code was to contain certain other provisions with respect to labor relations, the most important of which was the sanction of the right of collective bargaining. A stockholder's suit to enjoin a corporation from filing its acceptance of the code resulted in the adjudication of two major constitutional issues in *Carter v. Carter Coal Co.*, 298 U.S. 238 (1936).

All the members of the Supreme Court agreed that the act could not be sustained under the taxing power. This had been conceded by the government in its brief. The tax with the drawback was declared to be a penalty which was constitutional only if the act could be sustained under the commerce clause. On the issue whether the labor provisions of the statute were separable from the price-fixing provisions, the Court divided five to four. The majority, consisting of Mr. Justice Sutherland who wrote the opinion and Justices Van Devanter, McReynolds, Butler and Roberts, condemned the labor provisions as not within the commerce power and held that their invalidity vitiated the whole statute. Mr. Chief Justice Hughes agreed as to the invalidity of the labor provisions, but insisted that they were separable and that the price-fixing plan in its major features should be independently sustained. Mr. Justice Cardozo, for himself and Justices Brandeis and Stone, did not consider the validity of the labor provisions. The four dissenters agreed that the price-fixing provisions were constitutional and could stand independently. The five majority Justices did not consider the validity of the price-fixing provisions, but guarded against any intimation that such self-restraint was to be taken as approval.

The separability issue is not of permanent importance except as its treatment illustrates judicial technique. The act declared that the invalidity of any of its provisions should not affect the rest and that acceptance of the code should not preclude or estop a producer from contesting the constitutionality of

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any provision of the code or its validity as applied to him. All the Justices agreed that this did not bind the Court beyond evidence of Congressional intention to rebut the presumption of indivisibility, and that there remained the question whether the statute with the excised parts was so fundamentally different from the statute that came from Congress that the Court could not be certain that Congress would want the remnant alone. The major foundation of the minority determination of separability was the fact that the wages and hours provisions could not come into being until the Board found majority concurrence among producers and employees and that therefore they might never come into being at all. This fact, though recited in an earlier part of the majority opinion, was not mentioned in the argument adduced to support adjudication of inseparability. Reliance was placed rather on the importance of labor provisions in recitals and substantive clauses and on the fact that labor costs were to be taken account of in fixing prices. The minority agreed that Congress cared for the labor provisions if it could get them, but insisted that labor difficulties were due in large part to price cutting and that stabilization of prices would make for stabilization of wages at higher scales, and that it was clear enough that Congress wanted half a loaf if it could not get a whole one.

In the majority opinion, Mr. Justice Sutherland, before coming to the question whether Congress may regulate labor relations in mining, took eight pages to establish that Congress has no powers other than those conferred in the granting clauses of the Constitution and that the Constitution is a law superior to a statute. This was thought to be necessary because certain recitals in the statute were assumed to suggest the entertaining of a contrary view by Congress. No such issue, however, was raised by the Government in its briefs. It was agreed on all sides that the act must be justified under the commerce power or not at all. The crucial issue was whether labor

activities in mining under the circumstances revealed in the record had a direct effect on interstate commerce. Six Justices agreed that they did not. Mr. Justice Sutherland quoted at length from the opinion of the Chief Justice in the *Schechter Case* (295 U.S. 543), and concluded: "A reading of the entire opinion makes clear, what we now declare, that the want of power on the part of the federal government is the same whether the wages, hours of service, and working conditions, and the bargaining about them, are related to production before interstate commerce has begun, or to sale and distribution after it has ended."

Cases in which the Sherman Act had been applied against conduct by labor unions were differentiated by saying that the local acts there brought under Federal control were ones in which the intent of the actors "was to restrain interstate commerce, and the means employed were calculated to carry that intent into effect." To this it is added that in those cases "interstate commerce was the direct object of the attack; and the restraint of such commerce was the necessary consequence of the acts and the immediate end in view." Of the regulation in the case at bar and of the formula for determining whether it comes within the national commerce power, Mr. Justice Sutherland says:

Whether the effect of a given activity or condition is direct or indirect is not always easy to determine. The word "direct" implies that the activity or condition invoked or blamed shall operate proximately—not mediately, remotely, or collaterally—to produce the effect. It connotes the absence of an efficient intervening agency or condition. And the extent of the effect bears no logical relation to its character. The distinction between a direct and an indirect effect turns, not upon the magnitude of either the cause or the effect, but entirely upon the manner in which the effect has been brought about. If the production by one man of a single ton of coal in-

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tended for interstate sale and shipment, and actually so sold and shipped, affects interstate commerce indirectly, the effect does not become direct by multiplying the tonnage, or increasing the number of men employed, or adding to the expense or complexities of the business, or by all combined. It is quite true that rules of law are sometimes qualified by considerations of degree, as the government argues. But the matter of degree has no bearing upon the question here, since that question is not—What is the *extent* of the local activity or condition, or the *extent* of the effect produced upon interstate commerce? but—What is the *relation* between the activity or condition and the effect?

Much stress is put upon the evils which come from the struggle between employers and employees over the matter of wages, working conditions, the right of collective bargaining, etc., and the resulting strikes, curtailment and irregularity of production and effect on prices; and it is insisted that interstate commerce is *greatly* affected thereby. But, in addition to what has just been said, the conclusive answer is that the evils are all local evils over which the federal government has no legislative control. The relation of employer and employee is a local relation. At common law, it is one of the domestic relations. The wages are paid for the doing of local work. Working conditions are obviously local conditions. The employees are not engaged in or about commerce, but exclusively in producing a commodity. And the controversies and evils, which it is the object of the act to regulate and minimize, are local controversies and evils affecting local work undertaken to accomplish that local result. Such effect as they may have upon commerce, however extensive it may be, is secondary and indirect. An increase in the greatness of the effect adds to its importance. It does not alter its character.

The wage and hour provisions of the statute were also declared unconstitutional for the further reason that the scale to be prescribed by the Board was to be that in effect between the requisite majority of producers and employees. It was denied that this was merely leaving to the Board the determination of a fact. The Chief Justice said that "such a provision, apart from the mere question of the delegation of legislative power, is not in accord with the requirement of due process of law." This would seem to mean that the Court would forbid a similar delegation indulged in by a State. The majority opinion also invoked due process. On the delegation point, Mr. Justice Sutherland spoke in part as follows:

The power conferred upon the majority is, in effect, the power to regulate the affairs of an unwilling minority. This is legislative delegation in its most obnoxious form; for it is not even delegation to an official or an official body, presumptively disinterested, but to private persons whose interests may be and often are adverse to the interests of others in the same business. . . . The difference between producing coal and regulating its production is, of course, fundamental. The former is a private activity; the latter is necessarily a governmental function, since, in the very nature of things, one person may not be entrusted with the power to regulate the business of another, and especially of a competitor. And a statute which attempts to confer such power undertakes an intolerable and unconstitutional interference with personal liberty and private property. The delegation is so clearly arbitrary, and so clearly a denial of rights safeguarded by the due process clause of the Fifth Amendment, that it is unnecessary to do more than refer to decisions of this court which foreclose the question.

With respect to the provisions for fixing the prices of coal, on which the majority opinion did not pass,

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the Chief Justice briefly asserted the power of Congress over sales in interstate commerce and said that the application of the act to competing intra-state sales would be the subject of consideration when it arises in any particular application of the act. He cited without disapproval the Government's contentions based on the analogy of Federal power over intra-state railroad rates, but he refrained from any explicit commitment. On the issue of due process of law he contented himself with citing the *Nebbia* Case for the conclusion that "we are not at liberty to deny to the Congress, with respect to interstate commerce, a power commensurate with that enjoyed by the States in the regulation of their internal commerce" and with adding: "Whether the policy of fixing prices of commodities sold in interstate commerce is a sound policy is not for our consideration. The question of that policy, and of its particular applications, is for Congress. The exercise of the power of regulation is subject to the constitutional restriction of the due process clause, and if in fixing rates, prices or conditions of competition, that requirement is transgressed, the judicial power may be invoked to the end that the constitutional limitation may be maintained."

Mr. Justice Cardozo dealt in greater detail with both the commerce and the due-process questions. He adduced the history and the present conditions of the bituminous coal industry to establish the justification for price fixing and for the inclusion of competing local sales in the Congressional plan. He insisted that the *Schechter* Case did not deal with local prices and wages in the abstract but only with prices and wages under particular conditions. What the cases allowing national regulation of intra-state railroad rates really mean, he says, "is that a causal relation in such circumstances is so close and intimate and obvious as to permit it to be called direct without subjecting the word to an unfair or excessive strain." In applying those cases to the coal industry he adds:

There is a like immediacy here. Within rulings the most orthodox, the prices for intrastate sales of coal have so inescapable a relation to those for interstate sales that a system of regulation for transactions of the one class is necessary to give adequate protection to the system of regulation adopted for the other. The argument is strongly pressed by intervening counsel that this may not be true in all communities or in exceptional conditions. If so, the operators unlawfully affected may show that the Act to that extent is invalid as to them. Such partial invalidity is plainly an insufficient basis for a declaration that the Act is invalid as a whole.

On the due-process issue Mr. Justice Cardozo referred to the conditions which had been found to justify state regulation of the price of milk and then said:

All this may be said, and with equal, if not greater force, of the conditions and practices in the bituminous coal industry, not only at the enactment of this statute in August, 1935, but for many years before. Overproduction was at a point where free competition had been degraded into anarchy. Prices had been cut so low that profit had become impossible for all except the lucky handful. Wages came down along with prices and with profits. There were strikes, at times nation-wide in extent, at other times spreading over broad areas and many mines, with the accompaniment of violence and bloodshed and misery and bitter feeling. The sordid tale is unfolded in many a document and treatise. . . . The hope of betterment was faint unless the industry could be subjected to the compulsion of a code. . . . The plight of the industry was not merely a menace to owners and to mine workers: it was and had long been a menace to the public, deeply concerned in a steady and uniform supply of a fuel so vital to the national economy.

Congress was not condemned to

inaction in the face of price wars and wage wars so pregnant with disaster. Commerce had been choked and burdened; its normal flow had been diverted from one state to another; there had been bankruptcy and waste and ruin alike for capital and for labor. The liberty protected by the Fifth Amendment does not include the right to persist in this anarchic riot. . . . The free competition so often figured as a social good imports order and moderation and a decent regard for the welfare of the group. . . . After making every allowance for difference of opinion as to the most efficient cure, the student of the subject is confronted with the indisputable truth that there were ills to be corrected, and ills that had a direct relation to the maintenance of commerce among the states without friction or diversion. An evil existing, and also the power to correct it, the lawmakers were at liberty to use their own discretion in the selection of the means.

THE TENNESSEE VALLEY AUTHORITY

The attack on the Tennessee Valley Authority was in the form of a bill by a small minority of preferred stockholders of the Alabama Power Co. to enjoin the corporation from carrying into effect a contract with the Authority. The contract provided for the sale to the Authority of some transmission lines leading from the government plant on the Wilson Dam, the purchase by the Company of surplus electrical energy from the Authority, and the interchange of power between the two. The stockholders made no contention that their corporation could not make a similar contract with a private corporation. The only basis of their charge that the contract was ultra vires was that the Government had no constitutional right to authorize the Tennessee Valley Authority to make the engagement. By a vote of five to four in *Ashwander v. Tennessee Valley Authority*, 297 U.S. 288 (1936), it was held that the preferred stockholders were

entitled to raise the constitutional issue in their suit. The objectors on this point were Justices Brandeis, Stone, Roberts and Cardozo. With the majority on the jurisdictional issue was Mr. Justice McReynolds, who, however, alone dissented from the determination that the Authority had constitutional power to make the contract.

In sanctioning the suit of the preferred stockholders, Mr. Chief Justice Hughes for the majority invoked precedents of similar suits by common stockholders where the only question as to the propriety of the action of the corporation was the action of the Government on the other side, and declared that the different status of preferred stockholders is not sufficient to deny to them the right to make a complaint. He pointed out that there might be cases in which all the common stockholders had acquiesced in the corporate action, so that preferred stockholders might be the only ones entitled to complain against an alleged injury to their proprietary rights. He refused to make a distinction that here the corporation had voluntarily entered into a contract whereas in many other cases the corporation had been threatened with coercive governmental action, and he gave as a reason that if the contract on the part of the governmental authority were an unconstitutional excess of power on its part, the corporation and its stockholders might be left with a doubtful remedy or with no means of securing actual reparation for what it had yielded under the invalid contract.

The dissenting opinion of Mr. Justice Brandeis on the jurisdictional issue contains a long essay on general considerations recognized as governing the exercise of the power of judicial review and applies those general considerations more particularly to the invoking of equitable relief by preferred stockholders. It urged also that the right of action was that of the corporation itself and that the corporation was estopped to deny the validity of an authority under which it had acted and received benefits. It insisted in

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addition that the stockholders were estopped by their own long inaction. To this the Chief Justice answered that "estoppel in equity must rest on substantial grounds of prejudice or change of position, not on technicalities." The contending opinions are too long and too detailed to be reviewed here, though the issue is one of far-reaching practical importance. The majority do not go so far as to say that the court is bound to take jurisdiction in such a case. If future Justices should in sufficient numbers share the dissenting attitude, the Court can decline jurisdiction in particular cases as a matter of equitable discretion without overruling the decision in the principal case.

On the substantive issue, the difference between the eight Justices and Mr. Justice McReynolds is on the scope of judicial inquiry and on the facts of the particular case. The latter says that he does not "find serious difficulty with the notion that the United States, by proper means and for legitimate ends, may dispose of water power or electricity honestly developed in connection with permissible improvements of navigable waters." He insists, however, that the contract before the court "cannot be regarded as a mere isolated effort to dispose of property." He reviews at length various pronouncements of officials of the Tennessee Valley Authority and finds that "the record leaves no room for reasonable doubt that the primary purpose was to put the Federal Government into the business of distributing and selling electric power throughout certain large districts, to expel the power companies which had long serviced them, and to control the market therein." He says nothing about the construction of the Wilson Dam or the generation of electricity there. He says little about the particular contract that gave rise to the suit except to insist that it has not been shown that it was necessary in order to sell surplus power and to call it "a deliberate step into a forbidden field, taken

with definite purpose to continue the trespass."

For the majority the Chief Justice carefully confines the issue to the particular contract and to the particular dam involved. Of the relation between the two he notes that "the Government rightly conceded at the bar, in substance, that it was without constitutional authority to acquire or dispose of such energy except as it comes into being in the operation of works constructed in the exercise of some power delegated to the United States." He adds that "these transmission lines lead directly from the dam, which has been lawfully constructed, and the question of the constitutional right of the Government to acquire or operate local or urban distribution systems is not involved." He concludes his opinion by saying: "We express no opinion as to the validity of such an effort, as to the status of any other dam or power development in the Tennessee Valley, whether connected with or apart from the Wilson Dam, or as to the validity of the Tennessee Valley Authority Act or of the claims made in the pronouncements and program of the Authority apart from the questions we have discussed in relation to the particular provisions of the contract of January 4, 1934, affecting the Alabama Power Company."

With the question thus narrowed, the opinion first sanctions the construction of the Wilson Dam as an exercise both of the war power and the commerce power to improve navigation. It takes judicial notice of the international situation at the time when the construction of the dam was first authorized and says that it cannot be disputed that "the Wilson Dam and its auxiliary plants, including the hydro-electric power plant, are, and were intended to be, adapted to the purposes of national defense." On the commerce question it notes that "the improvement of navigation on this river has been a matter of national concern for over a century" and concludes by saying that "while, in its present condition, the Tennessee River is not adequately improved for commercial

navigation, and traffic is small, we are not at liberty to conclude either that the river is not susceptible of development as an important waterway, or that Congress has not undertaken that development, or that the construction of the Wilson Dam was not an appropriate means to accomplish a legitimate end."

The final question is the authority of Congress to dispose of the electric energy generated at the dam. The electric energy is declared to be "property belonging to the United States" and thus within the explicit clause giving Congress power to dispose of and to make all needful rules and regulations concerning property belonging to the United States. "To the extent that the power of disposition is thus expressly conferred, it is manifest that the Tenth Amendment is not applicable." The opinion then reviews the history of public land legislation, with its reservation of mineral lands and the leasing of such lands with judicial sanction, and continues:

But when Congress thus reserved mineral lands for special disposal, can it be doubted that Congress could have provided for mining directly by its own agents, instead of giving that right to lessees on the payment of royalties? Upon what ground could it be said that the Government could not mine its own gold, silver, coal, lead, or phosphates in the public domain, and dispose of them as property belonging to the United States? That it could dispose of its land but not of what the land contained? It would seem to be clear that under the same power of disposition which enabled the Government to lease and obtain profit from sales by its lessees, it could mine and obtain profit from its own sales.

The question is whether a more limited power of disposal should be applied to the water power, convertible into electric energy, and to the electric energy thus produced at the Wilson Dam constructed by the Government in the exercise of its constitutional

functions. If so, it must be by reason either of (1) the nature of the particular property, or (2) the character of the "surplus" disposed of, or (3) the manner of disposition.

The first point is dealt with by saying that it is well established that "the water power and the electric energy generated at the dam are susceptible of disposition as property belonging to the United States." The second point is put and considered as follows:

The argument is stressed that, assuming that electric energy generated at the dam belongs to the United States, the Congress has authority to dispose of this energy only to the extent that it is a surplus necessarily created in the course of making munitions of war or operating the works for navigation purposes; that is, that the remainder of the available energy must be lost or go to waste. We find nothing in the Constitution which imposes such a limitation. It is not to be deduced from the mere fact that the electric energy is only potentially available until the generators are operated. The Government has no less right to the energy thus available by letting the water course over its turbines than it has to use the appropriate processes to reduce to possession other property within its control, as, for example, oil which it may recover from a pool beneath its lands, and which is reduced to possession by boring oil wells and otherwise might escape its grasp. . . . And it would hardly be contended that, when the Government reserves coal on its lands, it can mine the coal and dispose of it only for the purpose of heating public buildings or for other governmental operations. Or, if the Government owns a silver mine, that it can obtain the silver only for the purpose of storage or coinage. Or that when the Government extracts the oil it has reserved, it has no constitutional power to sell it. Our decisions

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recognize no such restriction. . . The United States owns the coal, or the silver, or the lead, or the oil, it obtains from its lands, and it lies in the discretion of the Congress, acting in the public interest, to determine how much of the property it shall dispose. We think that the same principle is applicable to electric energy.

With respect to the method of disposition of the surplus energy, the opinion notes that the Constitution is silent as to method but that it may be assumed that the means must be appropriate to the nature of the property, "must be one adopted in the public interest as distinguished from a private or personal one" and "must be consistent with the fundamental principles of our dual system of government and must not be contrived to govern the concerns reserved to the States." Earlier in the opinion the mere sale of the surplus energy had been approved. The interchange of energy between the Authority and the Power Company was declared to be a form of disposition and to present no questions essentially different from those pertinent to sales. More detailed consideration was given to the purchase of power lines leading from the dam. The alternative was said to be the sale of the power at the dam for which there appeared to be but a single purchaser. "We know of no constitutional ground," said the Chief Justice, "upon which the Federal Government can be denied the right to seek a wider market." The purchase of the transmission lines was likened to the acquisition of mules to carry ore from a government mine to market. The Power Company has no constitutional right to insist that it be the only purchaser of the power or that the energy be sold to it or go to waste.

THE NEW YORK MINIMUM WAGE LAW

In 1923, by a vote of five to three (Mr. Justice Brandeis not sitting), the Supreme Court declared unconstitutional the Act of Congress making provision for the prescription of

a minimum wage for women employed in industry in the District of Columbia, *Adkins v. Children's Hospital*, 261 U.S. 525 (1923). Previously the Court had been divided four-to-four on the issue raised by an Oregon statute, again Mr. Justice Brandeis not sitting, *Stetter v. O'Hara*, 243 U.S. 629 (1917). These earlier statutes directed the minimum wage to be fixed at the sum required to equal the cost of decent subsistence of the worker. In the course of condemning the Congressional act, Mr. Justice Sutherland had pointed out that it compelled the employer "to pay at least the sum fixed in any event, because the employee needs it, but requires no service of equivalent value from the employee." He added that "a statute requiring an employer . . . to pay the value of the services rendered . . . would be understandable." In the light of this background, recent statutes in a number of States have been framed with the design of establishing the minimum wage at not more than the value of the services rendered where such value is less than the cost of decent subsistence.

That such was the design of the New York statute condemned in *Morehead v. New York ex rel. Tipaldo*, 298 U.S. 587 (1936), would naturally be inferred from its characterization by the New York Court of Appeals, as quoted in both majority and minority opinions in the Supreme Court. This is as follows: "The New York Act . . . prohibits an oppressive and unreasonable wage, which means *both* less than the fair and reasonable value of the services *and* less than sufficient to meet the minimum cost of living necessary for health." In saying this, the New York court quoted the language of the statute, putting on it only the gloss of italicizing the words *both* and *and*. In addition, however, the New York court went on to say:

The act of Congress had one standard, the living wage; this State act has added another, reasonable value. The minimum wage must include *both*. What was vague before has not been made any clearer. One of the elements,

THE SUPREME COURT AND CONSTITUTIONAL LAW

therefore, in fixing the fair wage is the very matter which was the basis of the congressional act. Forcing the payment of wages at a reasonable value does not make inapplicable the principle and ruling of the *Adkins* case. The distinctions between this case and the *Adkins* case are differences in details, methods and time; the exercise of legislative power to fix wages in any employment is the same.

For the majority of the Supreme Court, Mr. Justice Butler takes this language to mean that the fair wage to be prescribed by the New York commission must equal the cost of decent subsistence even though that is in excess of the value of the services rendered. He quotes from a brief in support of the statute which seems to take the same view of the New York court's language, but insists that it is a misconception of the statute. To the complaint of such misconception, Mr. Justice Butler invokes the established answer that the New York court is the final authority on the meaning of the New York statute. For the minority, Mr. Chief Justice Hughes, without explicitly meeting the New York Court's statement that "the minimum wage must include both" standards, says of its opinion:

But the court expressly recognizes that a wage is not denounced by the New York act as "oppressive and unreasonable" unless it is less than the fair and reasonable value of the services rendered. The statute also provides in explicit terms that the "fair wage" which is to be prescribed is one that is "fairly and reasonably commensurate with the value of the service or class of service rendered." I find nothing in the opinion of the state court which can be taken to mean that this definite provision of the statute is not obligatory upon the authorities fixing a fair wage. Certainly, the court has not said so, and I think that we must assume that the standard thus described is set up by the New

York act. And there is no suggestion that the "fair wage" as prescribed in the instant case was not commensurate with the reasonable value of the service rendered by the employees.

The insistence by the majority that the constitutional issue before the court is whether the State may prescribe a rate equal to the cost of decent living in any event and in addition prescribe that the rate must equal the value of the services rendered in any event, keeps the decision from being a technical precedent against a statute that is clearly construed by a state court to mean what it says, *i.e.*, that forbidden wages are those that are *both* less than the cost of decent living *and* less than the value of the services rendered. However, as we shall see from further consideration of Mr. Justice Butler's opinion, he does not confine himself to the narrow issue which he was so zealous to establish as the only one open to consideration. In still another respect he goes beyond what he insists is the issue before him. He points out that the petition for certiorari did not question the standing of the *Adkins* Case which condemned the District of Columbia Act, but alleged merely that the New York statute is significantly different. Therefore the petitioner "is not entitled and does not ask to be heard upon the question whether the *Adkins* Case should be overruled." Thus technically the issue is dependent upon an hypothesis not open to question until some one directly attacks the *Adkins* Case. However, the opinion is not narrowly confined to a mere hypothesis.

A further preliminary and technical point may be worthy of notice. The New York statute was opposed in the New York court as invalid both under the state and under the Federal constitution. If held unconstitutional under the state constitution by the state court, the statute is not law, even though it is immune from criticism under the Federal constitution. To the reader of the opinion of the New York Court of Appeals, it was by no means clear that the state

I. AMERICAN POLITICAL HISTORY

court confined itself to the Federal question. The Supreme Court would have been readily justified in declining to review the state decision on the ground that it was not clear that the Federal question was still open and in controversy between the parties. Indeed in the Supreme Court Mr. Justice Butler says that the state court "held the Act repugnant to the due process clauses of the state and federal constitutions." If this is so, the Federal question had become moot. It does not cease to be moot because in the remittitur, as Mr. Justice Butler recites, the state court "certified that the federal constitutional question was presented and necessarily passed upon." It certainly was not necessary to pass upon the Federal question if the statute was condemned under the state constitution. Either the New York court or the Supreme Court seems to have been guilty of procedural error.

On the major fundamental issue, the opinion of Mr. Justice Butler is confined mainly to quotation, paraphrase and analysis of the opinion in the *Adkins* Case. He insists that the grounds of the *Adkins* Case were not confined to objections to a standard of wages that might be in excess of the value of the services rendered but that they included immunity of the wage relationship from legislative prescription of the amount of the wage. He puts this position as follows:

Petitioner does not attempt to support the Act as construed by the state court. His claim is that it is to be tested here as if it did not include the cost of living and as if value of service were the sole standard. Plainly that position is untenable. If the State has power to single out for regulation the amount of wages to be paid women, the value of their services would be a material consideration. But that fact has no relevancy upon the question whether the State has any such power. And utterly without significance upon the question of power is the suggestion that the New York prescribed standard in-

cludes value of service with cost of living whereas the District of Columbia standard was based upon the latter alone. As shown above, the dominant issue in the *Adkins* case was whether Congress had power to establish minimum wages for adult women workers in the District of Columbia. The opinion directly answers in the negative. The ruling that defects in the prescribed standard stamped that Act as arbitrary and invalid was an additional ground of subordinate consequence.

For support of this broad interpretation of the scope of the *Adkins* Case Mr. Justice Butler adduces the fact that the dissenting opinions in that case did not discuss the validity of the particular standard there in issue. Clearly, he says, the dissenting Justices "understood—and rightly—that, by the opinion of the court, it was held that Congress was without power to deal with the subject at all." This broad statement renders unnecessary all the preceding discussion as to what was the precise ruling of the New York court with respect to the New York statute and as to what questions are properly open before the Supreme Court in a case in which the petition for certiorari did not question the continuing validity of the *Adkins* Case. The opinion notes also that the *Adkins* Case has been followed and cited by the Supreme Court and that "this court, after thoughtful attention to all that was suggested against that decision, adhered to it as sound." This seems more than a mere refusal to go into the question of the soundness of the *Adkins* Case, notwithstanding the insistence that the petitioner was not entitled to call the case in question.

In one respect at least, Mr. Justice Butler condemns the New York statute upon grounds other than precedent. In refusing to give weight to the "factual background" recited in the act, he notes that there were substantially similar recitals in another act limited to an emergency and applying to both men and women. This act was vetoed. Of reg-

ulating the wages of women without regulating the wages of supposedly competing men, Mr. Justice Butler says:

While men are left free to fix their wages by agreement with employers, it would be fanciful to suppose that the regulation of women's wages would be useful to prevent or lessen the evils listed in the first section of the Act. Men in need of work are as likely as women to accept the low wages offered by unscrupulous employers. Men in greater number than women support themselves and dependents and because of need will work for whatever wages they can get and that without regard to the value of the service and even though the pay is less than minima prescribed in accordance with this Act. It is plain that, under circumstances such as those portrayed in the "Factual background," prescribing of minimum wages for women alone would unreasonably restrain them in competition with men and tend arbitrarily to deprive them of employment and a fair chance to find work.

The dissenting opinion of Mr. Justice Hughes, in which the other dissenters join, is in terms confined to the legitimacy of the distinction between a wage equal to the cost of living and a wage not in excess of the value of the services rendered, though not a little of it is more general in its scope in establishing the recognized need for legislative action with respect to the wages of women in industry. Its concluding paragraphs are as follows:

If liberty of contract were viewed from the standpoint of absolute right, there would be as much to be said against a regulation of the hours of labor of women as against the fixing of a minimum wage. Restriction upon hours is a restriction upon the making of contracts and upon earning power. But the right being a qualified one, we must apply in each case the test of reasonableness in the circumstances

disclosed. Here, the special conditions calling for the protection of women, and for the protection of society itself, are abundantly shown. The legislation is not less in the interest of the community as a whole than in the interest of the women employees who are paid less than the value of their services. That lack must be made good out of the public purse. Granted that the burden of the support of women who do not receive a living wage cannot be transferred to employers who pay the equivalent of the service they obtain, there is no reason why the burden caused by the failure to pay that equivalent should not be placed upon those who create it. The fact that the State cannot secure the benefit to society of a living wage for women employees by any enactment which bears unreasonably upon employers does not preclude the State from seeking its objective by means entirely fair both to employers and the women employed.

In the statute before us, no unreasonableness appears. The end is legitimate and the means appropriate. I think that the act should be upheld.

The separate dissent of Mr. Justice Stone on behalf of himself and Justices Brandeis and Cardozo begins by saying:

While I agree with all the Chief Justice has said, I would not make the differences between the present statute and that involved in the *Adkins* case the sole basis of decision. I attach little importance to the fact that the earlier statute was aimed only at a starvation wage and that the present one does not prohibit such a wage unless it is also less than the reasonable value of the service. Since neither statute compels employment at any wage, I do not assume that employers in one case, more than in the other, would pay the minimum wage if the service were worth less.

The vague and general pronouncement of the Fourteenth

I. AMERICAN POLITICAL HISTORY

Amendment against deprivation of liberty without due process of law is a limitation of legislative power, not a formula for its exercise. It does not purport to say in what particular manner that power shall be exerted. It makes no fine-spun distinctions between methods which the legislature may and which it may not choose to solve a pressing problem of government. It is plain too, that, unless the language of the amendment and the decisions of this Court are to be ignored, the liberty which the amendment protects is not freedom from restraint of all law or of any law which reasonable men may think and appropriate means for dealing with any of those matters, of public concern with which it is the business of government to deal. There is grim irony in speaking of the freedom of contract of those who, because of their economic necessities, give their services for less than is needful to keep body and soul together. But if this is freedom of contract no one has ever denied that it is freedom which may be restrained, notwithstanding the Fourteenth Amendment, by a statute passed in the public interest.

Then follows a review of the cases in which the Court has sustained price-fixing and a presentation of the underlying justification therefor. Of the general power over the subject matter, it is said:

No one doubts that the presence in the community of a large number of those compelled by economic necessity to accept a wage less than is needful for subsistence is a matter of grave public concern, the more so when, as has been demonstrated here, it tends to produce ill health, immorality and deterioration of the race. The fact that at one time or another Congress and the legislatures of seventeen states, and the legislative bodies of twenty-one foreign countries, including Great Britain and its four commonwealths, have found that wage regulation is an appropriate corrective for serious social and

economic maladjustments growing out of inequality in bargaining power, precludes, for me, any assumption that it is a remedy beyond the bounds of reason. It is difficult to imagine any grounds, other than our own personal economic predilections, for saying that the contract of employment is any the less an appropriate subject of legislation than are scores of others, in dealing with which this Court has held that legislatures may curtail individual freedom in the public interest.

Mr. Justice Stone next points out that the basis on which rested various decisions adverse to price regulation has been deprived of its former standing by the later case sustaining the New York regulation of the price of milk. After quoting from the opinion of Mr. Justice Roberts in that case, he continues:

That declaration and decision should control the present case. They are irreconcilable with the decision and most that was said in the *Adkins* case. They have left the Court free of its restriction as a precedent, and free to declare that the choice of the particular form of regulation by which grave economic maladjustments are to be remedied is for legislatures and not the courts.

In the years which have intervened since the *Adkins* case we have had opportunity to learn that a wage is not always the resultant of free bargaining between employers and employees; that it may be one forced upon employees by their economic necessities and upon employers by the most ruthless of their competitors. We have had opportunity to perceive more clearly that a wage insufficient to support the worker does not visit its consequences upon him alone; that it may affect profoundly the entire economic structure of society and, in any case, that it casts on every taxpayer, and on government itself, the burden of solving the problems of poverty, subsistence, health and morals of large numbers in the community. Be-

cause of their nature and extent these are public problems. A generation ago they were for the individual to solve; today they are the burden of the nation. I can perceive no more objection, on constitutional grounds, to their solution by requiring an industry to bear the subsistence cost of the labor which it employs, than to the imposition upon it of the cost of its industrial accidents. . . .

It is not for the courts to resolve doubts whether the remedy by wage regulation is as efficacious as many believe, or is better than some other, or is better even than the blind operation of uncontrolled economic forces. The legislature must be free to choose unless government is to be rendered impotent. The Fourteenth Amendment has no more embedded in the Constitution our preference for some particular set of economic beliefs than it has adopted, in the name of liberty, the system of theology which we may happen to approve.

THE MUNICIPAL BANKRUPTCY ACT

By an amendment to the Bankruptcy Act, Congress provided that municipalities, political subdivisions, taxing districts, etc., of States might under stated conditions file an involuntary petition in bankruptcy and with designated assents of creditors and the approval of the bankruptcy court effect a compromise and composition of their obligations. One of the stated conditions of the act explicitly left to the States the power to require state approval for the filing of a petition and state approval of the plan of adjustment ultimately decreed by the bankruptcy court. In *Ashton v. Cameron County District*, 298 U.S. 513 (1936), by a vote of five to four, the statute was held unconstitutional as an encroachment upon the sovereignty of the States. The majority opinion was written by Mr. Justice McReynolds and concurred in by Justices Van Devanter, Sutherland, Butler and Roberts. For the purpose of the case, the majority as-

sumed that the statute is "adequately related to the general subject of bankruptcies," and did not consider any issue of due process of law.

While Mr. Justice McReynolds talks about the inability of the Federal Government to impose its will upon the sovereign powers of the States, his opinion seems to go so far as to deny the power of the State to consent to any Federal legislation touching upon its sovereign powers. Whether this is so is dependent upon the inference to be drawn from the following general declarations in the opinion:

If obligations of States or their political subdivisions may be subjected to the interference here attempted, they are no longer free to manage their own affairs; the will of Congress prevails over them; although inhibited, the right to tax might be less sinister. And really the sovereignty of the State, so often declared necessary to the federal system, does not exist. . . .

The Constitution was careful to provide that "No State shall pass any Law impairing the Obligation of Contracts." This she may not do under the form of a bankruptcy act or otherwise. . . . Nor do we think she can accomplish the same end by granting any permission necessary to enable Congress so to do.

Neither consent nor submission by the States can enlarge the powers of Congress; none can exist except those which are granted. . . . The sovereignty of the State essential to its proper functioning under the Federal Constitution cannot be surrendered; it cannot be taken away by any form of legislation. . . .

Like any sovereignty, a State may voluntarily consent to be sued; may permit actions against her political subdivisions to enforce their obligations. Such proceedings against these subdivisions have often been entertained in federal courts. But nothing in this tends to support the view that the Federal Government, acting under the

I. AMERICAN POLITICAL HISTORY

bankruptcy clause, may impose its will and impair state powers—pass laws inconsistent with the idea of sovereignty.

The reference to the obligation of contracts might be taken to imply that the consent of the State to the application of the Federal act is ineffective only when the State would thereby become a participant in the impairment of the obligation of contracts. State bankruptcy legislation does not impair the obligation of contracts when it operates either retroactively or extraterritorially. Thus under this interpretation there might be a prospect for a limited application of the plan of Congress. However, the succeeding paragraph of the opinion says that neither consent nor submission by the States can enlarge the powers of Congress. The minority opinion of Mr. Justice Cardozo does not seek to interpret the majority opinion on this point. It insists that the obligation of contracts clause is inapplicable because impairment is effected, not by the State consent, but by the operation of the Federal act through the decree of the bankruptcy court, and the Federal Government is not forbidden to impair the obligation of contracts. The dissenting opinion leaves to one side the question whether the bankruptcy power could operate on the States themselves and insists that the local governmental subdivisions stand in a different relation to the problem.

FEDERAL CONVERSION OF STATE LOAN ASSOCIATIONS

The Court was unanimous in holding in *Hopkins Loan Association v. Cleary*, 296 U.S. 315 (1935), that Congress may not authorize state building and local associations to convert themselves into Federal associations without the consent of the State by which they are incorporated. In such a field there is no paramount national power as there is in the field of war or commerce. Whatever the power of Congress to create similar organizations, this does not carry with it a power to annihilate or transform state organizations. Such cor-

porations are more than mere business corporations. They are quasi-public in character, created to carry out state policy and therefore a special concern of the State. Hence the State has a concern and a right of its own to secure their perpetuation as state organizations. This justified the State through its appropriate agency, in bringing suit to enjoin the conversion and to secure a decree compelling the association to continue under the aegis and control of the State.

PRISON-MADE GOODS

In the First Child Labor Case, the Supreme Court held by a vote of five to four that a Congressional prohibition of the transportation of goods from factories in which children work is not a regulation of commerce but a regulation of the antecedent manufacture. No point was made of the fact that it did not have to be shown that child labor contributed to the making of the particular goods shipped. It would seem that goods made by prison labor could not be differentiated from goods made by child labor. Therefore, so long as the Child Labor Case is law, it would seem that Congress could not prohibit the interstate transportation of prison-made goods, since this would be a regulation not of commerce but of the antecedent manufacture. In 1929, Congress passed the Hawes-Cooper Act to become effective five years later. This was modelled on the Wilson Act which allowed States to deal with intoxicating liquor from other States upon its arrival within the State as they deal with liquor of local origin. So the Hawes-Cooper Act permits the State of destination to apply a general prohibitory law to the sale of prison-made goods even though they are still in the original package in which they have arrived from another State.

This statute and the consequent power of the State was sustained in a unanimous decision in *Whitfield v. Ohio*, 297 U.S. 431 (1936), in which, however, Justices Van Devanter, Mc-

CONGRESSIONAL AND STATE ELECTIONS OF 1936

Reynolds and Stone confined their concurrence to the result. The opinion of Mr. Justice Sutherland makes no mention of the Child Labor statute or the Child Labor Case. It relies wholly on the Liquor cases without noting the difficulty of the distinction between Congressional regulations dependent upon the inherent quality of goods transported and regulations dependent upon antecedent conditions of manufacture. It hints that the original-package test is more artificial than sound, notes that it is not the test applied to limit state power to tax goods from other States, but says that whether the view of the doctrine as applied to taxation should be given a more general application need not be decided. On the major point, it contents itself with saying:

The proposition is not contested that the Ohio statute would be

unassailable if made to take effect after a sale in the original package. And the statute as it now reads is equally unassailable, since Congress has provided that the particular subjects of interstate commerce here involved "shall be governed by a rule which divests them of that character at an earlier period of time than would otherwise be the case," . . . namely upon arrival and delivery.

If the power of Congress to remove the impediment to state control presented by the unbroken-package doctrine be limited in any way (a question which we do not now find it necessary to consider), it is clear that the removal of that impediment in the case of prison-made goods must be upheld for reasons akin to those which moved this court to sustain the validity of the Wilson Act.

CONGRESSIONAL AND STATE ELECTIONS OF 1936

By THOMAS N. HOOVER

PROFESSOR, OHIO UNIVERSITY

The avalanche of votes that returned President Roosevelt to the White House for another term, returned many a Republican Senator, Representative and Governor to private life. The candidates and the votes each received, and a summary of state issues adopted, are here given.

STATE ISSUES

Alabama.—Five proposals for amending the state constitution were submitted to the voters, and all were rejected. Four of the proposals dealt with local affairs in certain counties or towns, one providing for the suspension of sentences in criminal cases if the sentence did not exceed imprisonment for more than five years.

Arizona.—A referendum measure relating to Workmen's Compensation Insurance was rejected, 15,656 for, 19,302 against.

California.—Twenty-four proposals were submitted to the voters of which 20 were rejected. Those approved related to assessment districts, taxes, penal institutions and city and county governments.

Colorado.—Nine amendments were submitted to the voters of which six were accepted and three rejected.

Florida.—Two amendments were submitted to and ratified by the voters. One proposal was for old age pensions, the other related to cities and counties.

Georgia.—Seven amendments to the constitution were submitted to the voters, who approved two and rejected five. Those approved had to do with cases in the Supreme Court, and zoning laws for the city of Moultrie. Among those rejected were provisions for tax limitation, a Lieutenant Governor, a State Superintendent of Schools, and a four-year term for Governor.

I. AMERICAN POLITICAL HISTORY

Louisiana.—Thirty-five amendments to the constitution were submitted and all approved with one exception. They included exemption of certain livestock from taxation, a Department of Revenue, time for holding local elections, good roads, free textbooks, old age pensions. The proposal to make Aug. 30, birthday of Huey P. Long, deceased, a legal holiday was adopted by 243,105 to 47,568.

Maine.—Four legislative questions were submitted to a referendum. In each case the legislative action was sustained. One direct initiative bill was submitted to and approved by the voters, relating to the use of highway funds for certain purposes only.

Maryland.—Three amendments were submitted and approved, one relating to judicial circuits; another giving the governor power to fill vacancies in the state legislature, and the third removing double liability to stockholders in financial institutions.

Michigan.—An amendment was ratified relative to the use of dangerous weapons as evidence in criminal procedure.

Missouri.—An amendment to fix the compensation for members of the General Assembly was rejected. Three amendments were approved, one relating to pensions for firemen, one to retirement funds for teachers, and one to a Conservation Commission.

Montana.—Two amendments were added to the Constitution, prohibiting the consolidation of counties unless by approval of voters and relating to hours of labor in industries.

Nevada.—One amendment was added to the Constitution, limiting the tax rate to a maximum of five per cent. An initiated measure providing for old age pensions was rejected.

New Hampshire.—The sale of beverages (beer) and establishment of state-operated stores for the sale of liquor were approved.

New York.—The \$30,000,000 bond issue for emergency relief was approved 1,578,519 against 788,512; not

voting, 3,112,894. It was voted to hold a state Constitutional Convention, 1,413,604 against 1,190,275; not voting, 2,913,552.

North Carolina.—Five amendments to the Constitution were approved; these related to Judiciary; exemption of \$1,000 value of homes from taxation; classification of property for taxing purposes, limitation of income tax at 10%; and limitation upon the increase of public debt.

North Dakota.—An initiated measure relating to liquor control was approved.

Ohio.—Two amendments were added to the Constitution. One, proposed by the General Assembly, eliminates the double liability of stockholders in financial institutions. The other, proposed by initiative petition, prohibits a sales tax on food products.

South Carolina.—The legislature was authorized to enact legislation relative to the care of the needy.

South Dakota.—Five amendments were added to the Constitution. One provided that the number of members of the lower house of the state legislature be not less than 50 nor more than 75; of the upper house, not less than 25 nor more than 35. Another provides for the election of a Superintendent of Public Instruction on a non-political ballot. Other amendments removed the four-year term limitation from the County Superintendent of Schools, limited the power of counties in extending credits, and changed the clause relating to liability of stockholders in financial institutions.

Texas.—A proposal to provide a state dispensary system for the sale of liquor was rejected. Five amendments were added, providing for retirement fund for teachers; workmen's compensation; a Board of Pardons; fixing salaries of state officials, the governor's at \$12,000, and apportioning the number of state representatives.

Utah.—The Constitution was amended to provide for exemption of homes from taxation. Five other proposals were rejected.

Wisconsin.—An amendment relative to free passes was adopted.

CONGRESSIONAL AND STATE ELECTIONS OF 1936

ALABAMA

U. S. Senator

John H. Bankhead, D.....	239,532
H. E. Berkstresser, R.....	33,697
William C. Irby, U.....	2,022

Representatives in Congress

1. Frank W. Boykin, D.....	23,421
Frank Bunkley (written in)....	2
2. Lister Hill, D.....	32,452
J. W. Clemmons, U.....	298
3. H. B. Steagall, D.....	22,535
4. Sam Hobbs, D.....	22,615
Chas. R. Robinson, R.....	3,556
5. Joe Starnes, D.....	29,891
6. Pete B. Jarman, Jr., D.....	18,325
7. W. B. Bankhead, D.....	25,126
J. B. Weaver, R.....	9,311
8. John J. Sparkman, D.....	27,788
Harry J. Frahn, U.....	86
9. Luther Patrick, D.....	36,405
J. G. Bass, R.....	3,177
W. S. Glazener, U.....	64

ARIZONA

Governor

R. C. Stanford, D.....	87,678
Thomas E. Campbell, R.....	36,114
Paul J. Lindaman, S.....	260

Representatives in Congress

John R. Murdock, D.....	84,343
George L. Burgess, R.....	20,383
A. B. Potter, S.....	295

ARKANSAS

Governor

Carl E. Bailey, D.....	158,743
Ozro Cobb, R.....	27,351

U. S. Senator

Joe T. Robinson, D.....	154,866
G. C. Ledbetter, R.....	27,746
Claude C. Williams, S.....	1,587

Representatives in Congress

1. W. J. Driver, D.....	20,555
Jno. E. Miller, D.....	19,212
Judson Hout, R.....	3,050
3. Claude A. Fuller, D.....	18,848
J. S. Thompson, R.....	9,222
4. Ben Cravens, D.....	26,249
5. D. D. Terry, D.....	29,382
Thompson, I.....	1
6. John L. McClellan, D.....	25,736
7. Wade Kitchens, D.....	20,323
W. L. Jameson, R.....	979

CALIFORNIA

Representatives in Congress

1. Clarence F. Lea, D.....	58,073
Nelson B. Van Matre, R.....	48,647
Vernon D. Healy, C.....	1,218
2. Harry L. Englebright, R., D., P.	51,416
3. Frank H. Buck, D., R.....	93,110
Walter Schaefer (write in)....	5,310
Perry Hill, C.....	4,390
4. Franck R. Havenner, P., D....	64,063
Florence P. Kahn, R.....	43,805
Anita Whitney, C.....	1,711

5. Richard J. Welch, R., D., P....	82,910
Lawrence Ross, C.....	4,545
6. Albert E. Carter, R. D.....	103,712
Clarence E. Rust, S.....	8,247
Lloyd L. Harris, C.....	2,021
7. John H. Tolan, D.....	69,463
Charles W. Fisher, R.....	46,647
8. John Joseph McGrath, D., P....	78,557
Alonzo L. Baker, R.....	57,808
9. B. W. Gearhart, R., D.....	82,360
Carl B. Patterson, C.....	2,571
10. Henry E. Stubbs, D.....	72,367
George R. Bliss, R.....	31,700
11. John S. McGroarty, D.....	69,679
Carl Hinshaw, R.....	54,914
Robert S. Funk, P.....	12,340
William Ingham, C.....	1,041
12. H. Jerry Voorhis, D.....	62,034
Frederick F. Houser, R.....	53,445
13. Charles Kramer, D., R.....	119,251
Emma Cutler, C.....	6,362
Floyd Seaman (write in)....	6,946
14. Thomas F. Ford, D.....	63,365
William D. Campbell, R.....	25,497
Albert L. Johnson, P.....	12,874
15. John M. Costello, D., P.....	99,107
Ernest Walker Sawyer, R.....	44,559
16. John F. Dockweiler, D.....	90,986
Raymond V. Darby, R.....	66,583
17. Charles J. Colden, D.....	68,189
Leonard Roach, R.....	24,981
John L. Leach, C.....	1,634
18. Byron N. Scott, D.....	61,415
James F. Collins, R.....	42,748
19. Harry R. Sheppard, D.....	70,339
Sam L. Collins, R.....	59,071
Charles McLauchlan, C.....	1,336
20. Ed. V. Izac, D.....	59,208
Ed. P. Sample, R.....	44,925

COLORADO

Governor

Teller Ammons, D.....	elected
Charles M. Armstrong, R.....	defeated
(Votes not available)	

U. S. Senator

Ed. C. Johnson, D.....	299,376
Raymond I. Sauter, R.....	166,308
George Carleton, U.....	1,705
Carle Whitehead, S.....	4,438

Representatives in Congress

1. Lawrence Lewis, D.....	100,704
Harry Zimmerhackel, R.....	41,574
F. S. Kidneigh, S.....	1,073
Louella Grant Shirley, Town., F. L.....	2,675
2. George H. Bradfield, R.....	57,145
Fred Cummings, D.....	66,420
George L. Slater, S.....	1,099
3. John A. Martin, D.....	74,013
J. Arthur Phelps, R.....	48,871
4. Edward T. Taylor, D.....	42,010
John S. Woody, R.....	22,175

CONNECTICUT

Governor

Wilbur L. Cross, D.....	re-elected
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Representatives in Congress

(At Large)

William M. Citron, D.....	371,572
Francis A. Pallotti, R.....	282,618

I. AMERICAN POLITICAL HISTORY

Martin F. Plunkett, S.	10,936
Andrew Jacob, S. L.	1,612
R. H. Loomis, C.	1,208
C. T. Tryon, U.	21,566
1. Herman P. Kopplemann, D.	101,766
Walter E. Batterson, R.	66,005
Max Reiner, S.	793
Richard X. Farber, C.	343
John J. Godfrey, U.	6,811
2. William J. Fitzgerald, D.	55,369
William L. Higgins, R.	50,369
Harold C. White, S.	490
James I. Mundell, U.	2,456
3. James A. Shanley, D.	77,295
John F. Lynch, R.	57,243
Carl M. Rhodin, S.	1,280
Emma Davis, C.	286
C. Joseph Rowley, U.	5,443
4. Alfred N. Phillips, Jr., D.	80,875
Schuyler Merritt, R.	67,768
George W. Murgatroyd, S.	7,791
Louis Scala, C.	351
Richard F. Warren, U.	5,072
5. J. Joseph Smith, D.	55,897
J. Warren Upson, R.	39,230

DELAWARE

Governor

Richard McMullen, D.	65,509
Harry L. Cannon, R.	52,879
Isaac D. Short, I. R.	8,282

U. S. Senator

James H. Hughes, D.	67,136
Daniel O. Hastings, R.	52,460
C. W. Perry, S.	183
R. G. Houston, I. R.	6,897

Representatives in Congress

William F. Allen, D.	65,485
John G. Stewart, R.	55,654
W. A. Mayer, S.	176
James A. Ellison, I. R.	5,338

FLORIDA

Governor

Fred P. Cone, D.	253,638
E. E. Callaway, R.	59,832

U. S. Senator

Claude Pepper, D.	246,050
C. O. Andrews, D.	241,528
H. C. Babcock, R.	57,016

Representatives in Congress

1. J. Hardin Peterson, D.	61,855
B. L. Hamner, R.	21,215
2. R. A. Green, D.	47,520
3. Millard Caldwell, D.	34,239
4. J. Mark Wilcox, D.	46,854
T. E. Swanson, R.	19,515
5. Joe Hendricks, D.	42,937
C. F. Batchelder, R.	10,802

GEORGIA

Governor

E. D. Rivers, D.	elected
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U. S. Senator

Richard B. Russell, D.	258,468
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Representatives in Congress

1. Hugh Peterson, D.	25,846
2. E. E. Cox, D.	21,405
3. Steven Pace, D.	25,613
4. Emmet H. Owen, D.	24,643
5. Robt. Ramspeck, D.	35,540
Henry A. Alexander, R.	4,213
6. Carl Vinson, D.	22,966
7. M. C. Tarver, D.	28,972
L. M. Johnson, I.	2,493
8. Braswell Dean, D.	24,695
B. J. Ford, R.	1,450
9. Frank Wheelchel, D.	24,353
J. M. Johnson, R.	7,737
10. Paul Brown, D.	27,147

IDAHO

Governor

Clark, D.	115,098
Stephan, R.	83,430
Verhei, U.	2,716

U. S. Senator

Borah, R.	128,723
Ross, D.	74,444

Representatives in Congress

1. White, D.	58,941
Heckathorn, R.	24,959
2. Clark, D.	67,238
D. W. Orshak, R.	43,834

ILLINOIS

Governor

Henry Horner, D.	2,067,861
C. W. Brooks, R.	1,682,685
Wm. Hale Thompson, U.	128,962
John Fisher, S.	6,966

U. S. Senator

J. Hamilton Lewis, D.	2,142,887
Otis F. Glenn, R.	1,545,170
Newton Jenkins, U. P.	93,696
Arthur McDowell, S.	7,405

Representatives in Congress

(At Large). (Two to Elect)	
Lewis M. Long, D.	2,062,886
E. V. Champion, D.	2,032,432
R. H. Brandon, R.	1,568,552
J. T. Dempsey, R.	1,564,889
S. H. Hanson, U. P.	83,886
Rad Burnett, U. P.	81,527
1. Arthur W. Mitchell, D.	35,376
Oscar DePriest, R.	28,640
2. Raymond S. McKeough, D.	163,198
P. H. Moynihan, R.	130,197
3. Edward A. Kelly, D.	156,425
Frank M. Fulton, R.	106,300
4. Harry P. Beam, D.	69,931
Irene A. Thomas, R.	16,591
5. Adolph J. Sabath, D.	35,019
Max Price, R.	10,252
6. Thomas J. O'Brien, D.	204,548
Frederick A. Virkus, R.	107,649
7. Leonard W. Schuetz, D.	248,835
James C. Moreland, R.	158,755
8. Leo Kocialkowski, D.	34,452
Edw. Richard Piszatowski, R.	8,945
9. James McAndrews, D.	60,307
Bertha Baur, R.	41,587

CONGRESSIONAL AND STATE ELECTIONS OF 1936

10. Ralph E. Church, R.....	158,497
Charles J. Wightman, D.....	140,225
H. Truman Gordon, U. P.....	9,771
11. Chauncey W. Reed, R.....	99,027
John R. Barber, D.....	77,938
12. N. M. Mason, R.....	69,721
Dr. D. O. Thompson, D.....	58,263
D. S. Gishwiller, Town.....	7,203
13. Leo E. Allen, R.....	52,495
David L. Trunk, D.....	37,346
14. Chester Thompson, D.....	58,809
Clinton Searle, R.....	49,250
15. Lewis L. Boyer, D.....	54,703
Joe E. Anderson, R.....	53,531
Walter A. Thomas, U. P.....	2,612
16. Everett M. Dirksen, R.....	68,964
Charles C. Dickman, D.....	60,559
17. L. C. Arends, R.....	49,646
Frank Gillespie, D.....	42,071
18. James A. Meeks, D.....	61,286
Hugh M. Luckey, R.....	52,668
19. Hugh M. Rigney, D.....	77,446
William H. Wheat, R.....	61,535
20. Scott W. Lucas, D.....	48,128
Harry C. Montgomery, R.....	36,732
21. Frank W. Fries, D.....	62,769
Frank M. Ramey, R.....	58,573
22. Edwin M. Schaefer, D.....	96,589
Jesse R. Brown, R.....	66,960
23. Laurence F. Arnold, D.....	62,044
Ben O. Sumner, R.....	50,354
24. Claude V. Parsons, D.....	45,740
W. A. Spence, R.....	42,764
25. Kent E. Keller, D.....	68,995
J. Lester Buford, R.....	59,101

INDIANA

Governor

M. C. Townsend, D.....elected

Representatives in Congress

1. William T. Schulte, D.....	68,210
Fred F. Schultz, R.....	34,259
2. Charles A. Halleck, R.....	73,072
Hugh A. Barnhart, D.....	68,318
3. Samuel B. Pettengill, D.....	71,315
Andrew J. Hickey, R.....	52,462
4. James I. Farley, D.....	72,210
David Hogg, R.....	58,519
5. Glenn Griswold, D.....	70,854
Benjamin J. Brown, R.....	63,517
6. Virginia E. Jenckes, D.....	82,096
Noble J. Johnson, R.....	66,942
7. Arthur H. Greenwood, D.....	81,901
Gerald W. Landis, R.....	69,928
8. John W. Boehne, D.....	89,548
Charles F. Werner, R.....	50,590
9. Eugene B. Crowe, D.....	74,486
Chester A. Davis, R.....	62,714
10. Finly H. Gray, D.....	73,547
Clarence M. Brown, R.....	66,299
11. William H. Larrabee, D.....	80,856
Don F. Roberts, R.....	53,801
12. Louis Ludlow, D.....	77,510
Homer Elliott, R.....	54,885

IOWA

Governor

N. G. Kraschel, D.....	524,186
G. A. Wilson, R.....	521,746
Mr. Short, F-L.....	31,438

U. S. Senator

(Full Term)

C. L. Hering, D.....	539,555
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L. J. Dickinson, R.....	503,635
Buresch, F-L.....	25,567
(Unexpired Term)	
Guy M. Gillette, D.....	536,075
B. F. Holden, R.....	478,521
Quick, F-L.....	16,179

Representatives in Congress

1. E. C. Eicher, D.....	55,721
J. N. Calhoun, R.....	53,474
2. W. S. Jacobsen, D.....	70,923
Charles Penningroth, R.....	55,255
George Koob, U.....	4,440
Archie Carter, F-L.....	3,739
3. J. W. Gwynne, R.....	53,928
A. C. Willford, D.....	47,391
L. R. Smith, U.....	2,515
4. Fred Biermann, D.....	56,308
H. O. Talle, R.....	51,805
W. L. Peck, F-L.....	3,186
5. Lloyd Thurston, R.....	63,802
K. F. Baldrige, D.....	58,971
Andy Swanson, F-L.....	1,023
6. C. C. Dowell, R.....	63,026
H. B. Dunlap, D.....	55,975
Charles Gay, F-L.....	1,312
7. O. D. Wearin, D.....	61,398
H. K. Peterson, R.....	59,834
8. F. C. Gilchrist, R.....	56,076
Ray Murray, D.....	48,403
Matilda S. Clark, F-L.....	2,430
9. V. F. Harrington, D.....	63,995
F. B. Wolf, R.....	53,675
G. L. Harrison, F-L.....	1,903
Leon Hilton, T-U.....	1,394

KANSAS

Governor

Walter A. Huxman, D.....elected

U. S. Senator

Arthur Capper, R.....	417,873
Omar B. Ketchum, D.....	396,685
T. C. Hager, S.....	4,775

Representatives in Congress

1. W. P. Lambertson, R.....	66,158
Howard S. Miller, D.....	47,303
2. U. S. Guyer, R.....	72,038
David C. Doten, D.....	60,049
Glenn A. Steven, I.....	3,005
3. Edward W. Patterson, D.....	55,541
Harold McGugin, R.....	52,235
L. P. Beard, I.....	6,921
4. Edward H. Rees, R.....	51,732
C. D. Hill, D.....	42,818
A. D. Wiseman, I.....	451
5. John M. Houston, D.....	62,501
J. B. Patterson, R.....	41,656
6. Frank Carlson, R.....	61,669
Arthur Connelly, D.....	56,850
7. Clifford R. Hope, R.....	66,553
Thomas A. Ralston, D.....	52,370

KENTUCKY

U. S. Senator

M. M. Logan, D.....	539,968
R. H. Lucas, R.....	365,850
W. M. Likins, U.....	11,709

Representatives in Congress

1. N. J. Gregory, D.....	58,265
Robert N. Brumfield, R.....	22,757

I. AMERICAN POLITICAL HISTORY

2. Glover H. Cary, D.....	70,949
Claude E. Smith, R.....	39,887
3. Emmet O'Neal, D.....	85,034
W. A. Armstrong, R.....	52,600
Jerry V. Spencer, U.....	3,206
4. E. W. Creal, D.....	54,616
Stanley Jagers, R.....	37,979
5. Brent Spence, D.....	57,842
Erwin L. Bramlage, R.....	25,011
Katherine J. Madden, U.....	3,860
6. Virgil Chapman, D.....	70,094
A. R. Anderson, R.....	48,771
Claude B. Robinson, I.....	2,237
7. A. J. May, D.....	40,366
John B. Mollette, R.....	31,865
8. Fred M. Vinson, D.....	60,474
W. Hoffman Wood, R.....	42,507
9. John M. Robsion, R.....	67,199
George L. Tye, D.....	41,958

LOUISIANA

Governor

Richard W. Leche, D.....	elected
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U. S. Senator

Allen J. Ellender, D.....	293,256
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Representatives in Congress

1. J. O. Fernandez, D.....	61,142
2. Paul H. Maloney, D.....	65,345
3. Robert Mouton, D.....	20,605
4. Overton Brooks, D.....	26,152
5. Newton V. Mills, D.....	29,144
6. John K. Griffith, D.....	34,908
7. Rene L. DeRouen, D.....	27,563
8. A. Leonard Allen, D.....	27,071

MAINE

Governor

Lewis O. Barrows, R.....	173,716
F. H. Dubord, D.....	130,466
B. C. Dubar, I.....	5,862

U. S. Senator

Wallace H. White, Jr., R.....	158,068
Louis J. Brann, D.....	153,420

Representatives in Congress

1. James C. Oliver, R.....	60,565
Simon M. Hamlin, D.....	44,106
2. Clyde H. Smith, R.....	53,822
Ernest L. McLean, D.....	38,986
J. Clarence Lackemy, I.....	8,197
A. Raymond Rogers, U.....	3,225
3. Ralph O. Brewster, R.....	56,044
Wallace F. Mabee, D.....	36,103

MARYLAND

Representatives in Congress

1. T. A. Goldsborough, D.....	38,705
O. S. Lloyd, R.....	25,780
2. Wm. P. Cole, D.....	98,515
H. C. Whiteford, R.....	60,003
O. S. Hunt, S.....	1,200
3. V. L. Palmisano, D.....	37,446
J. P. Hill, R.....	23,941
S. M. Neistadt, S.....	500
4. A. J. Kennedy, D.....	46,132
Daniel Ellison, R.....	39,653
Dr. R. Thalheimer, I.....	3,165
Elisabeth Gilman, S.....	595

5. S. W. Gambrill, D.....	47,145
R. C. Rowe, R.....	25,036
S. R. Angel, S.....	641
6. D. J. Lewis, D.....	53,504
H. W. LeGore, R.....	40,823
Merle Boyer, S.....	597

MASSACHUSETTS

Governor

Charles F. Hurley, D.....	867,743
John W. Haigis, R.....	839,740
Wm. H. McMasters, U.....	68,467
Fred G. Bushold, U. C.-T.....	23,605

U. S. Senator

Henry Cabot Lodge, R.....	875,160
James M. Curley, D.....	739,751
Thomas C. O'Brien, U.....	134,245
A. B. Cook, T.-Prohib.-Ec.....	11,519

Representatives in Congress

1. Allen T. Treadway, R.....	60,043
Owen Johnson, D.....	52,342
M. F. Hadley, S.-J.....	5,593
2. Charles R. Clason, R.....	57,618
Agnes C. Reavey, D.....	52,197
Harry A. Custis, I.....	3,993
S. R. Harlow, S.....	2,245
D. F. Moynahan, S.-J.....	1,654
3. Joseph Casey, D.....	64,960
B. W. Doyle, R.....	54,154
4. Pehr G. Holmes, R.....	61,624
E. A. Ryan, D.....	56,770
W. A. Ahern, S.....	1,354
5. Edith N. Rogers, R.....	90,845
Daniel J. Coughlin, D.....	48,701
J. T. Kevin, I.....	2,098
6. George J. Bates, R.....	79,145
John E. Taffe, D.....	36,171
7. William P. Connery, D.....	76,521
C. F. Nelson Pratt, R.....	51,009
J. F. Massidda, S.....	1,371
8. Arthur D. Healey, D.....	60,211
William S. Howe, R.....	46,446
Nelson F. Wright, U.....	6,010
William K. Mason, T.-S. J.....	1,913
9. Robert Luce, R.....	70,852
Richard M. Russell, D.....	61,582
C. Ernest Curtis, Town.....	5,076
Florence H. Luscomb, People's Labor.....	2,416
10. George H. Tinkham, R.....	74,251
William F. Madden, D.....	39,112
John McLaren, T.-C.-L.....	11,349
11. John P. Higgins, D.....	53,129
Joseph M. DeNapoli, R.....	8,523
John R. Hughes, I.....	2,946
12. John W. McCormack, D.....	78,711
Albert P. McCulloch, C.-R.....	35,827
13. Rich. B. Wigglesworth, R.....	76,793
Harry J. Dowd, D.....	54,576
14. Joseph W. Martin, R.....	58,758
Arthur Seagrave, D.....	38,609
Lawrence O. Witter, U.....	12,872
15. Charles L. Gifford, R.....	58,355
John D. W. Bodfish, D.....	42,538
John H. McNeece, S.-J.-T.....	12,419
William McAuliffe, U.....	2,199
Nora O. Duprey, S.....	1,008

MICHIGAN

Governor

Frank Murphy, D.....	892,774
Frank D. Fitzgerald, R.....	843,855

CONGRESSIONAL AND STATE ELECTIONS OF 1936

John Monarch, S.....	6,631
Simeon P. Martin, F.-L.....	3,289
Philip Raymond, C.....	2,071

U. S. Senator

Prentiss, M. Brown, D.....	910,937
Wilber M. Brucker, R.....	714,602
Louis B. Ward, Third Party.....	75,680
Roy E. Mathews, S.....	4,994
Lawrence Emery, C.....	2,145

Representatives in Congress

1. George G. Sadowski, D.....	72,713
Charles A. Roxborough, R.....	17,265
2. Earl C. Michener, R.....	53,845
Charles E. Downing, D.....	50,238
3. Paul W. Shafer, R.....	54,767
Rosslyn L. Sowers, D.....	50,956
4. Clare E. Hoffman, R.....	49,641
Guy M. Tyler, D.....	44,365
Felix A. Racette, sticker.....	4,104
5. Carl E. Mapes, R.....	49,860
Thomas F. McAllister, D.....	48,998
George Veldman, Third Party.....	4,069
6. Andrew J. Transue, D.....	72,556
William W. Blackney, R.....	53,140
7. Jesse P. Wolcott, R.....	54,693
Albert A. Wagner, D.....	36,462
8. Fred L. Crawford, R.....	45,379
Michael J. Hart, D.....	44,309
Clarence J. Brainerd, Third P.....	7,249
9. Albert J. Engel, R.....	40,675
Jack Eliasohn, D.....	40,095
10. Roy O. Woodruff, R.....	41,997
Wm. J. Kelly, D.....	30,784
11. John Luecke, D.....	46,284
Herbert J. Rushton, R.....	39,602
12. Frank E. Hook, D.....	46,284
W. Frank James, R.....	37,714
13. George D. O'Brien, D.....	63,479
Clarence J. McLeod, R.....	49,910
Maurice Sugar, F.-L.....	1,160
14. Louis C. Rabaut, D.....	66,791
Frederick M. Alger, Jr., R.....	41,130
Edgar J. Auclair, Third P.....	10,660
15. John D. Dingell, D.....	68,264
Nathaniel H. Goldstick, R.....	49,443
16. John Lesinski, D.....	56,589
Clyde M. Ford, R.....	35,223
Ralph B. Guy, Third P.....	4,572
17. George A. Dondero, R.....	51,603
Draper Allen, D.....	50,463
Maynard Seibert, Third P.....	5,593

MINNESOTA

Governor

Elmer A. Benson, F.-L.....	680,342
Martin A. Nelson, R.....	431,841
Earl Stewart, Industrial.....	7,996

U. S. Senator

(Full Term)	
Ernest Lundeen, F.-L.....	663,363
Theodore Christianson, R.....	402,404
(Short Term)	
Guy V. Howard, R.....	317,457
N. J. Holmberg, L.....	210,364
A. O. Devold, I.-P.....	147,858
J. G. Alexander, L.....	64,493

Representatives in Congress

1. August H. Andresen, R.....	60,980
Chester Watson, F.-L.....	27,753

Richard W. Morin, D.....	26,058
D. M. Quarles (?).....	5,385
2. Elmer J. Ryan, D.....	47,567
Henry Arens, F.-L.....	39,489
Christian J. Laurisch, R.....	34,268
3. Henry G. Teigan, F.-L.....	58,023
Milton Lindbloom, R.....	40,775
Martin A. Hogan, D.....	15,170
Mrs. Frank M. McConville, L.....	11,476
4. Melvin J. Maas, R.....	48,399
Howard Y. Williams, F.-L.....	48,039
A. B. C. Doherty, D.....	28,957
5. Dewey W. Johnson, F.-L.....	67,349
Walter H. Newton, R.....	58,110
M. J. Dillon, D.....	15,337
6. Harold Knutson, R.....	55,504
C. A. Ryan, F.-L.....	47,707
Joseph H. Kowalkowski, D.....	17,235
7. Paul John Kvale, F.-L.....	56,310
H. Carl Andersen, R.....	37,190
C. L. Cole, D.....	19,878
8. John T. Bernard, F.-L.....	69,788
William A. Pittenger, R.....	53,914
9. Richard T. Buckler, F.-L.....	48,256
Elmer A. Haugen, R.....	31,181
Martin O. Brandon, D.....	20,165

MISSISSIPPI

U. S. Senator

Byron P. Harrison, D.....	140,570
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Representatives in Congress

1. John E. Rankin, D.....	19,208
E. A. Williams, R.....	391
2. Wall Doxey, D.....	13,632
W. M. McDonough, R.....	150
3. W. M. Whittington, D.....	15,688
W. W. Gilbert, R.....	407
4. A. L. Ford, D.....	14,444
N. B. Woods, R.....	2
5. Ross A. Collins, D.....	26,150
D. V. Johnson, R.....	151
6. W. M. Colmer, D.....	25,385
7. Dan R. McGehee, D.....	32,004
L. R. Collins, R.....	828

MISSOURI

Governor

L. C. Stark, D.....	1,037,133
Mr. Barrett, R.....	772,934

Representatives in Congress

1. M. A. Romjue, D.....	68,447
J. G. Morgan, R.....	55,032
2. W. L. Nelson, D.....	81,293
O. B. Whitaker, R.....	58,610
3. R. M. Duncan, D.....	86,199
Miles Elliott, R.....	60,411
4. C. J. Bell, D.....	103,492
P. R. Byrum, R.....	35,081
5. J. B. Shannon, D.....	113,946
L. R. Johnson, R.....	40,546
6. R. T. Wood, D.....	74,202
T. H. Douglas, R.....	65,679
7. Dewey Short, R.....	73,861
Gene Frost, D.....	66,695
8. Clyde Williams, D.....	65,780
C. M. Becker, R.....	50,216
9. Clarence Cannon, D.....	62,623
Herschel Schooley, R.....	38,706
10. Orville Zimmerman, D.....	65,168
Linder Deimund, R.....	40,860
11. T. C. Hennings, D.....	94,330
I. C. Dyer, R.....	59,536

I. AMERICAN POLITICAL HISTORY

12. C. A. Anderson, D.....	125,333
H. P. Rosecan, R.....	97,151
13. J. J. Cochran, D.....	85,630
H. E. Wiehe, R.....	39,714

MONTANA

Governor

Roy E. Ayers, D.....	115,310
Frank A. Hazelbaker, R.....	108,914

U. S. Senator

James E. Murray, D.....	121,769
T. O. Larson, R.....	60,038
J. P. Monaghan, I.....	39,655

Representatives in Congress

1. Jerry J. O'Connell, D.....	54,816
H. L. Hart, R.....	31,231
2. James F. O'Connor, D.....	79,190
T. S. Stockdal, R.....	42,454

NEBRASKA

Governor

R. L. Cochran, D.....	Elected
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U. S. Senator

George W. Norris (by petition)....	258,700
Robert G. Simmons, R.....	223,276
Terry Carpenter, D.....	108,391

Representatives in Congress

1. Henry C. Luckey, D.....	61,104
Ernest B. Perry, R.....	52,137
Isaac B. Flint (by petition)...	1,404
2. Charles F. McLaughlin, D.....	66,833
Jackson B. Chase, R.....	38,511
Henry Hoffman (by petition)...	1,614
U. S. Renne (by petition).....	807
3. Karl Stefan, R.....	83,587
John Havekost, D.....	31,967
Raymond W. McNamara, U...	3,046
4. Charles G. Binderup, D.....	66,763
Arthur J. Denney, R.....	51,524
Bert W. Harris (by petition)...	2,401
5. Harry B. Coffee, D.....	62,714
Cullen N. Wright, R.....	36,396
Frank Brown (by petition), U...	7,912
Austin E. Jay (by petition)....	616

NEVADA

Representatives in Congress

J. G. Scrugham, D.....	25,575
Ed. C. Peterson, R.....	11,745
Harry H. Austin, I.....	6,444

NEW HAMPSHIRE

Governor

Francis P. Murphy, R.....	118,178
A. N. Blandin, D.....	89,011

U. S. Senator

H. Styles Bridges, R.....	107,923
Wm. N. Rogers, D.....	99,195

Representatives in Congress

1. Alphonse Roy, D.....	51,695
Arthur B. Jenks, R.....	51,678
2. Charles W. Tobey, R.....	53,606
Daniel J. Hagerty, D.....	45,437

NEW JERSEY

U. S. Senator

Wm. H. Smathers, D.....	916,414
W. W. Barbour, R.....	740,088

Representatives in Congress

1. Charles A. Wolverton, R.....	84,980
Guy Lee, Jr., D.....	75,631
David E. Fox, Towns.....	2,638
2. Elmer H. Wene, D.....	55,580
Isaac Bacharach, R.....	50,958
Ted Lenore, T.-Non-Part.....	3,241
3. William H. Sutphin, D.....	68,189
Albert B. Hermann, R.....	64,237
Elizabeth Halleck, Towns.....	2,176
4. D. Lane Powers, R.....	58,258
Joseph A. Daly, D.....	52,735
5. Charles A. Eaton, R.....	65,459
Charles S. Mackenzie, D.....	62,904
6. Donald H. McLean, R.....	62,525
Frank Moore, D.....	61,351
7. J. Parnell Thomas, R.....	58,021
H. P. J. Hoffmann, D.....	54,163
8. George N. Seger, R.....	57,778
Leo V. Becker, D.....	52,430
William J. Vanderbeck, T.-S. J.	2,954
9. Edward A. Kenney, D.....	67,874
Lawrence A. Cavinato, R.....	57,547
10. Fred A. Hartley, Jr., R.....	52,197
Lindsay H. Rudd, D.....	51,532
11. Edward L. O'Neill, D.....	54,402
Peter A. Cavicchia, R.....	48,672
12. Frank W. Towey, Jr., D.....	54,688
Frederick R. Lehlbach, R.....	54,363
13. Mary T. Norton, D.....	93,702
John J. Grossi, R.....	27,615
Charles V. McCarthy, N. S. J..	2,099
14. Edward J. Hart, D.....	96,053
Fred G. Tauber, R.....	23,985

NEW MEXICO

Governor

Clyde Tingley, D.....	98,089
Jaffa Miller, R.....	72,511

U. S. Senator

(Long Term)	
Carl A. Hatch, D.....	104,550
E. W. Everly, R.....	64,817
(Short Term)	
Dennis Chavez, D.....	94,585
M. A. Otero, Jr., R.....	75,029

Representatives in Congress

J. J. Dempsey, D.....	106,937
M. Ralph Brown, R.....	62,375

NEW YORK

Governor

Herbert H. Lehman, D.....	2,970,595
William F. Bleakley, R.....	2,450,104
Harry W. Laidler, S.....	96,233
Robert Minn, S.....	40,406

Representatives in Congress

(At Large)	
Matthew J. Merritt, D.....	3,013,931
Caroline O'Day, D.....	2,992,057
Natalie F. Couch, R.....	2,078,803
A. J. Contiguglia.....	2,028,865
1. Robert L. Bacon, R.....	185,891
Gerald Morrell, D, U.....	144,562
Christine Schmitdchen, S.....	6,483

CONGRESSIONAL AND STATE ELECTIONS OF 1936

2. William B. Barry, D.....	222,217	William F. McCann, —.....	4,586
Allen E. R. Craig, R.....	90,437	Murray Gross, S.....	2,904
Samuel A. DeWitt, S.....	5,809	Samuel C. Patterson, C.....	1,942
Paul Crosbie, C.....	2,801	22. Edward W. Curley, D.....	49,495
3. Joseph L. Pfeifer, D.....	40,640	Victor Santini, R.....	12,220
Jerome G. Licari, R.....	8,680	David Tulchin, S.....	1,082
Ernest Mendez, S.....	658	Richard Sullivan, C.....	949
Dominick Flaiani, C.....	631	23. Charles A. Buckley, D.....	202,730
4. Thomas H. Cullen, D.....	43,917	Isaac F. Becker, R.....	51,623
William G. Nolan, R.....	11,594	Alice Udren, C.....	10,231
David M. Cory, S.....	690	Charles Hendley, S.....	8,163
Charles Warren, C.....	336	24. James M. Fitzpatrick, D.....	183,823
5. Marcellus H. Evans, D.....	63,661	Oliver C. Carpenter, R.....	82,759
Frank A. Dalton, R.....	30,995	E. Primoff, C.....	8,874
Joseph G. Glass, S.....	2,090	Jacob Jay, S.....	6,347
Sadie Berg, C.....	1,383	25. Charles D. Millard, R.....	97,953
6. Andrew L. Somers, D.....	126,024	Homar A. Stebbins, D.....	73,132
Donald C. Strachan, R.....	43,862	Leonard Bright, S.....	2,395
Jacob Axelrod, S.....	6,308	Antonio Lombardo, C.....	500
Constance Jackson, C.....	6,207	26. Hamilton Fish, Jr., R.....	72,302
7. John J. Delaney, D.....	46,154	Alpha R. Whiton, D.....	49,137
Joseph M. Aimes, R.....	12,085	Allan Irish, S.....	2,084
Tom Malloy, C.....	1,651	Ignazio Capnini, C.....	156
Sam Baron, S.....	1,213	27. Philip A. Goodwin, R.....	61,748
8. Donald L. O'Toole, D.....	217,568	D. Roy Shafer, D.....	44,220
Nathan Greenbaum, R.....	64,002	Elizabeth Sedlar, S.....	1,746
Isadore Begun, C.....	11,336	I. Katzowitz, C.....	290
Mary W. Hillyer, S.....	8,448	28. William T. Byrne, D.....	85,004
9. Eugene E. Keogh, D.....	91,803	Colin D. MacRae, R.....	52,498
Robert E. Hower, R.....	42,456	Frank A. Purcell, Square Deal	5,189
Theodore Shapiro, S.....	3,340	Nelson J. Belanger, S.....	2,812
Charles Oberkirsh, C.....	2,265	29. E. Harold Cluett, R.....	74,644
10. Emanuel Celler, D.....	47,872	John J. Nyhoff, D.....	44,567
Mortimer H. Michaels, R.....	17,643	Percy Dake, S.....	2,537
Joe Weiss, C.....	2,225	30. Frank Crowther, R.....	57,482
Louis Sadoff, S.....	1,865	Earl E. Cummins, D., A. L....	51,590
11. James A. O'Leary, D.....	56,307	Lewi Tonks, S.....	2,066
Archibald Cooper, R.....	25,553	Clarence Carr, C.....	192
Zekor Antousen, S.....	1,534	31. Bertrand H. Snell, R.....	54,160
Edward Crowley, C.....	1,078	George C. Owens, D.....	31,752
12. Samuel Dickstein, D.....	19,280	Jesse W. Williams, Town.....	6,185
Joseph Levine, R.....	2,136	32. Francis D. Culkin, R.....	65,761
Sadie Van Veen, C.....	559	Paul J. Woodard, D.....	32,318
Edwin Koppel, S.....	328	Orley N. Tooley, S.....	1,389
13. Christopher D. Sullivan, D....	20,456	33. Fred J. Douglas, R.....	63,281
Vincent A. Marsicano, R.....	4,254	Fred J. Sisson, D.....	45,969
Joseph Magliacano, C.....	578	William D. Arquint, Prosperity	8,479
David Lasser, S.....	370	Peter Hansen, S.....	1,428
14. William I. Sirovich, D.....	25,528	34. Bert Lord, R.....	75,580
Emanuel A. Manginelli, R.....	13,059	John T. Buckley, D.....	47,857
Max Bedacht, C.....	1,911	Merle A. Wilson, S.....	1,241
Bruno Fischer, S.....	1,043	35. Clarence E. Hancock, R.....	85,702
15. John J. Boylan, D.....	32,435	Arthur R. Perrin, D.....	59,540
Arthur Wyler, R.....	7,953	Robert H. Anderson.....	9,798
Harold Hickerson, C.....	844	Samuel M. Wolfson, S.....	2,431
Edward R. Hardy, Jr., S.....	626	Lempi Makela, C.....	229
16. John J. O'Connor, D.....	33,082	36. John Taber, R.....	61,271
J. Homer Cudmore, R.....	17,832	William A. Aiken, D.....	32,318
John A. Hastings, —.....	1,811	John E. DuBois, Town.....	8,003
Marthe Teichman, C.....	1,378	Walter O'Hagen, S.....	1,908
Frank N. Tragger, S.....	1,044	37. W. Sterling Cole, R.....	73,018
17. Theodore A. Peyser, D.....	48,611	Paul Smith, D.....	38,560
Frederick F. Greenman, R.....	41,430	Trevor Teele, S.....	1,493
William Edlin, S.....	1,797	Allen R. Chase, C.....	145
Louis Burdenz, C.....	1,470	38. George B. Kelly, D.....	82,708
18. Martin J. Kennedy, D.....	36,317	Joseph Fritsch, Jr., R.....	72,910
William I. Cohen, R.....	11,851	Glenn W. Simpson, —.....	2,519
Horace Hollister, S.....	995	Richard Briggs, S.....	1,680
John P. Caldwell, C.....	666	Ezra Harari, C.....	414
19. Sol Bloom, D.....	74,160	39. James W. Wadsworth, R.....	66,869
William S. Bennet, R.....	24,835	Donald J. Corbett, D.....	41,699
John J. Neary, —.....	3,583	Charles A. Lissow, U.....	3,727
Layle Lane, S.....	2,127	Clair Walbridge, S.....	1,811
Theodore R. Bassett, C.....	1,934	Canio Perrini, C.....	172
20. John J. Lanzetta, D.....	18,772	40. Walter G. Andrews, R.....	94,682
Vito Marcantonio, R, C.....	17,212	John L. Beyer, D.....	68,241
Jean J. Caranel, S.....	668	Melvin A. Payne, U., Square	
21. Joseph A. Gavanag, D.....	114,626	Deal.....	13,593
Malinda Alexander, R.....	31,504		

I. AMERICAN POLITICAL HISTORY.

Thomas Justice, S.....	3,481
Edwin Richards, C.....	408
41. Alfred F. Beiter, D.....	55,508
Fred Kohler, R.....	45,113
Leonard P. Becht, ———	3,935
Benjamin M. Zalikowski, ———	3,630
Bruno Rantane, S.....	1,693
Frank Herron, C.....	247
42. James M. Mead, D.....	57,132
Eugene D. Crooker, R.....	32,395
Anthony Fitzgibbons, ———	6,840
John J. Szczepaniak, ———	3,384
Fred Riefler, S.....	1,304
Mattie Green, C.....	168
43. Daniel A. Reed, R.....	56,129
Clare Barnes, D.....	44,585
Joseph J. O'Brocta, S.....	1,336
Axel W. Berggren, C.....	172

NORTH CAROLINA

Governor

Clyde R. Hoey, D.....	542,139
Gillian Grissom, R.....	270,843

U. S. Senator

Josiah W. Bailey, D.....	563,968
Frank C. Patton, R.....	233,009

Representatives in Congress

1. Lindsay C. Warren, D.....	35,333
John Wilkinson, R.....	3,833
2. John H. Kerr, D.....	37,771
E. Dana Dickens, R.....	1,910
3. Graham A. Barden, D.....	34,524
Julian T. Gaskill, R.....	11,967
4. Harold D. Cooley, D.....	56,703
A. I. Ferree, R.....	17,179
5. Frank Hancock, D.....	48,500
Edw. F. Butler, R.....	17,671
6. Wm. B. Umstead, D.....	46,329
Willis H. Slane, R.....	20,092
7. J. Bayard Clark, D.....	41,549
W. C. Downing, R.....	8,396
8. Walter Lambeth, D.....	54,846
Kyle Hayes, R.....	30,699
9. Robt. L. Doughton, D.....	60,223
Watt Gragg, R.....	32,659
10. A. L. Bulwinkle, D.....	81,059
Calvin R. Edney, R.....	42,650
11. Zebulon Weaver, D.....	73,645
Clyde H. Jarrett, R.....	43,346

NORTH DAKOTA

Representatives in Congress

Usher L. Burdick, R.....	115,913
William Lemke, R.....	131,117
Henry Holt, D.....	100,609
J. J. Nygaard, D.....	89,722

OHIO

Governor

Martin L. Davey, D.....	1,539,993
John W. Bricker, R.....	1,412,780
A. R. Onda, C.....	7,373

Representatives in Congress

(At Large)

John McSweeney, D.....	1,553,059
Harold G. Mosier, D.....	1,493,152
George H. Bender, R.....	1,226,147
L. L. Marshall, R.....	1,121,370
William C. Sandberg, C.....	8,947
1. Joseph A. Dixon, D.....	71,935
John B. Hollister, D.....	66,082

2. Herbert S. Bigelow, D.....	67,213
Wm. E. Hess, R.....	62,546
3. Byron B. Harlan, D.....	101,115
Robert N. Brumbaugh, R.....	70,023
Leonidas E. Speer, I.....	9,886
4. Frank L. Kloebe, D.....	61,927
Robert W. Turner, R.....	53,352
5. Frank C. Kniffin, D.....	41,693
Stephen S. Beard, R.....	33,212
Fred L. Hay, I.....	3,663
6. James G. Polk, D.....	54,904
Emory F. Smith, R.....	45,733
7. Arthur W. Aleshire, D.....	68,456
L. T. Marshall, R.....	67,454
8. Brooks Fletcher, D.....	49,668
Grant E. Mouser, Jr., R.....	42,565
9. John F. Hunter, D.....	75,737
Raymond E. Hildebrand, R.....	55,043
Earl O. Lehman, I.....	3,739
10. Thomas A. Jenkins, R.....	46,965
O. J. Klefner, D.....	34,477

(Full Term)

11. Harold K. Claypool D.....	41,773
L. P. Mooney, R.....	33,249
James E. Ford, I.....	3,191

(Unexpired Term)

Peter F. Hammond, D.....	41,310
John L. Moriarty, R.....	31,864
12. Arthur P. Lamneck, D.....	88,222
Grant P. Ward, R.....	64,766
13. Dudley A. White, R.....	46,623
Forrest R. Black, D.....	39,042
Merrell E. Martin, I.....	12,959
14. Dow W. Harter, D.....	118,659
Carl D. Sheppard, R.....	77,039
Park Sumner, I.....	8,698
15. Robert T. Secrest, D.....	53,263
Kenneth C. Ray, R.....	42,053
16. William R. Thom, D.....	89,911
H. Ross Ake, R.....	54,979
A. M. Hickey, I.....	4,552
Jacob S. Coxey, Sr., U.....	2,384
17. William A. Ashbrook, D.....	69,446
James A. Glenn, R.....	48,270
Wm. Edw. Lyle, I.....	2,618
18. Lawrence E. Imhoff, D.....	83,052
Earl R. Lewis, R.....	54,119
19. Michael J. Kirwan, D.....	93,636
John G. Cooper, R.....	65,926
Joe Dallet, C.....	756
20. Martin L. Sweeney, D.....	54,295
Blase A. Buonpane, R.....	23,367
John L. Mihelich, I.....	22,158
21. Robert Crosser, D.....	70,596
Harry C. Gahn, R.....	23,811
22. Anthony Flegler, D.....	144,660
Chester C. Bolton, R.....	137,570

OKLAHOMA

U. S. Senator

Josh Lee, D.....	493,407
Herbert K. Hyde, R.....	229,004
Edgar Clemens, S.....	1,895

Representatives in Congress

1. Wesley E. Disney, D.....	81,286
Jo O. Ferguson, R.....	58,983
2. Jack Nichols, D.....	45,724
V. S. Cannon, R.....	26,310
3. Wilburn Cartwright, D.....	58,261
John D. Morrison, R.....	14,672
4. Lyle H. Boren, D.....	63,306
Fred L. Patrick, R.....	23,615
S. P. Green, I.....	127

CONGRESSIONAL AND STATE ELECTIONS OF 1936

5. R. P. Hill, D.....	78,873
John Williams Mee, R.....	33,071
6. Jed Johnson, D.....	52,373
L. M. Gensman, R.....	19,495
7. Sam Massingale, D.....	46,940
Clyde J. Matherly, R.....	9,396
8. Phil Ferguson, D.....	47,497
T. J. Sargent, R.....	32,858

OREGON

U. S. Senator

Charles L. McNary, R.....	199,332
Willis Mahoney, D.....	193,822

Representatives in Congress

1. James W. Mott, R.....	114,073
E. W. Kirkpatrick, D.....	59,788
2. Walter M. Pierce, D.....	46,412
Roy W. Ritner, R.....	21,813
3. Nanny Wood Honeyman, D.....	78,624
William A. Ekwall, R.....	45,872
John A. Jeffrey, I.....	21,848

PENNSYLVANIA

Representatives in Congress

1. Leon Sacks, D., V.....	67,276
Harry C. Ransley, R., N. U., Social Justice, Town, U. L....	34,813
Louis A. Manfredi, Old Age Pen- sion, Royal Oak.....	1,674
Constantino Lippa, C.....	233
Gamsheh Kutikoff, S.....	176
2. James P. McGranery, D. V.....	65,779
William H. Wilson, R., N. U., Social Justice, Town., U. L....	41,267
Thomas M. Lacy, Royal Oak..	2,502
David Braginsky, S.....	296
David Davis, F. I.....	123
3. Michael J. Bradley, D.....	75,445
Clare Gerald Fenerty, R., N. U., Royal Oak, Social Justice, Town., U. L.....	48,035
Robert Fletcher, S.....	289
Gladys Zeeman, C.....	237
William Leader, No Party.....	6
4. J. Burrwood Daly, D.V.....	77,406
Boise Penrose, Jr., R., N. U., Social Justice, Town., U., U. L.....	41,545
David B. Hughes, American, Royal Oak.....	3,870
William Eckel, S.....	351
John W. Reedy, Sr., F.-L.....	159
Edwin S. McKin, Common- wealth, Town.....	2
5. Frank J. G. Dorsey, D., Royal Oak, V.....	72,210
James J. Connolly, R., N. U., Town., U., U. L., Non-par- tisan.....	46,038
William M. Leader, F.-L.....	8,882
William Eckels, S.....	312
6. Michael J. Stack, D., Justice, Royal Oak.....	84,487
George F. Holmes, R., N. U., Social Justice, Town., U. L....	51,892
Charles Krueger, Roosevelt New Deal.....	1,026
Harry Berger, S.....	435
Norris Erlichman, C.....	361
Albert H. Coggins, Common- wealth, Town.....	52
7. Ira Walton Drew, D., Royal Oak.....	77,949
George P. Darrow, R.....	71,749

David Felix, S.....	529
Thomas F. Lester, Social Justice	209
William Leader, No Party.....	3
8. James Wolfenden, R.....	73,335
Howard Kirk, D., Royal Oak..	66,119
Jesse H. Holm, S.....	548
C. Wilfred Conard, P.....	375
9. Oliver W. Frey, D.....	56,108
Theodore R. Gardner, R.....	50,361
Charles Henry Weller, Royal Oak.....	2,423
Louis Shoemaker, S.....	701
Harry B. Parks, F.-L.....	484
10. J. Roland Kinzer, R.....	72,181
H. Clay Burkholder, D.....	62,768
Owen E. Conn, Royal Oak....	1,675
William W. Halligan, S.....	372
Harry C. Rote, C.....	80
11. Patrick J. Boland, D.....	75,905
John J. Owens, R.....	50,123
James B. Murrin, I. Royal Oak	5,533
Noah Altschuler, S.....	364
12. J. Harold Flannery, D.....	99,161
C. Murray Turpin, R.....	84,902
Joseph Calabelle, S.....	473
13. James H. Gildea, D., Royal Oak, U.....	83,662
James H. Kirchner, R.....	68,772
Thomas W. Howells, S.....	550
Peter Paul, C.....	174
14. Guy L. Moser, D., Royal Oak..	46,192
Charles E. Roth, R.....	28,001
Raymond S. Hoises, S.....	11,278
Howard Moser, No Party.....	659
Charles Althouse, No Party..	593
15. Albert G. Rutherford, R.....	55,268
C. Elmer Dietrich, D.....	45,808
Edward Ace, P.....	529
B. W. Bowman, S.....	251
16. Robert F. Rich, R.....	54,040
Paul A. Rothfuss, D., F.-L., Royal Oak, Nonpartisan....	49,249
W. F. Kunkle, P.....	615
George Hartman, S.....	354
17. J. William Ditter, R.....	67,850
George H. Bartholomew, D.....	55,083
Frank P. Kleschick, Royal Oak.	2,310
George W. Bause, S.....	571
18. Benjamin K. Focht, R.....	49,243
John M. Keichline, D.....	41,881
19. Guy J. Swope, D.....	73,374
Isaac H. Doutrich, R., Royal Oak.....	67,884
Harold V. McNair, Thomas Jef- ferson.....	572
Milton Ibach, S.....	547
Paul K. Evans, F.-L.....	494
20. Benjamin Jarrett, R.....	58,738
D. J. Driscoll, D.....	56,941
John W. Ownes, Royal Oak....	4,022
Robert G. Burnham, P.....	1,348
R. S. Stewart, S.....	329
21. Francis E. Walter, D.....	56,566
William R. Coyle, R.....	39,537
Joseph H. Daley, Royal Oak..	3,077
Paul Cotton, S.....	479
22. Harry L. Haines, D.....	66,306
Frank S. Magill, R., U.....	49,273
George D. Sheely, P., Old Age Security.....	5,246
Truman J. Keesey, F.-L.....	256
Francis M. Fishbaugh, Towns.	201
23. Don Gingery, D.....	53,629
Benjamin C. Jones, R.....	46,726
Charles S. Kniss, Town.....	8,509
George W. Hartmann, S.....	715
24. J. Buell Snyder, D.....	62,009
Davis W. Henderson, R.....	40,067
Charles H. Musgrove, S.....	355

I. AMERICAN POLITICAL HISTORY

25. Charles I. Faddis, D.....	61,988
John C. Judson, R.....	30,208
Leo B. Schoener, S., Royal Oak, No Party.....	2,055
David Morris, P.....	400
26. Charles R. Eckert, D.....	71,332
Orville Brown, R.....	52,925
Edwin F. G. Harper, Town....	2,071
George Sowash, P.....	766
Sam McKee, S.....	340
27. Joseph Gray, D.....	83,908
Walter E. Morris, R.....	67,809
Walter A. Stutzman, Town....	2,169
Clark Witherow, P.....	687
Gerald Lyons, S.....	450
F. D. Kirsch, Jefferson, Cool- idge.....	118
28. Robert G. Allen, D.....	67,169
James B. Weaver, R., Royal Oak.....	42,259
John R. Keister, S.....	1,580
S. W. Bierer, P.....	487
29. Charles N. Crosby, D., Royal Oak.....	48,993
Will Rose, R.....	40,687
James E. Condren, U.....	739
Thomas Lindey, S.....	415
O. B. Patterson, P.....	318
30. Peter J. De Muth, D., I., Royal Oak, Nonpartisan.....	65,465
James A. Geltz, R., U.....	43,878
Sarah Limbach, S.....	607
Gladden William James, United Parties.....	227
31. James L. Quinn, D., U.....	81,544
James H. McClure, R.....	45,742
William Ebling, F.-L.....	1,289
William Adams, S.....	890
32. Herman P. Eberharter, D., I....	49,722
Jacob E. Kalson, R., U.....	21,067
Theodore L. Moritz, Progres- sive, Royal Oak.....	3,688
Max Weisman, S.....	299
Ben Careathers, C.....	195
Samuel K. Cunningham, P.....	143
33. Henry Ellenbogen, D., I., Pro- gressive.....	70,601
Edward O. Tabor, R.....	38,383
George F. Griffiths, S.....	457
34. Matthew A. Dunn, D., F.-L., I., U.....	80,194
Elmer A. Barchfeld, R., Royal Oak.....	43,827
Herbert Pastorious, S.....	453

RHODE ISLAND

U. S. Senator

Theodore Francis Greene, D.....	149,141
Jesse H. Metcalf, R.....	136,125
— La Pointe, U.....	21,495

Representatives in Congress

1. Aime J. Forand, D.....	74,061
Charles F. Risk, R.....	62,442
— Dunn, U.....	10,068
2. John M. O'Connell, D.....	75,769
Harry Sandager, R.....	71,626
— Dougherty, U.....	10,594

SOUTH CAROLINA

U. S. Senator

James F. Byrnes, D.....	113,696
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Representatives in Congress

1. Thomas S. McMillan, D.....	15,772
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2. H. P. Fulmer, D.....	21,653
3. John C. Taylor, D.....	18,983
4. G. Heyward Mahon, Jr., D....	25,468
(To Fill Vacancy)	
G. Heyward Mahon, Jr., D....	24,715
5. J. P. Richards, D.....	15,748
6. A. H. Gasque, D.....	16,027

SOUTH DAKOTA

Governor

Leslie Jensen, R.....	1,151,659
Tom Berry, D.....	1,142,255

U. S. Senator

W. J. Burlow, D.....	141,509
Chandler Gurney, R.....	135,461
Arthur Bennett, L.....	12,816

Representatives in Congress

1. Fred H. Hidebrandt, D.....	110,829
Karl E. Mundt, R.....	108,259
2. Francis Case, R.....	34,812
Theo. B. Werner, D.....	32,549

TENNESSEE

Governor

Gordon Browning, D.....	332,523
P. H. Thatch, R.....	78,292

U. S. Senator

Nathan L. Bachman, D.....	273,298
Dwayne D. Maddox, R.....	69,753
John R. Neal, I.....	14,617
Howard Kester, —.....	2,516

Representatives in Congress

1. B. Carroll Reece, R.....	33,501
William M. Crawford, D.....	17,289
Charles W. Clark, —.....	4,684
2. J. Will Taylor, R.....	40,595
John T. O'Connor, D.....	38,991
Calvin Rutherford, —.....	386
3. Sam D. McReynolds, D.....	32,065
William Hillery, R.....	15,096
4. J. Ridley Mitchell, D.....	33,154
H. E. McLean, R.....	7,382
5. Richardson M. Atkinson, D....	34,277
E. L. Bradbury, R.....	2,163
6. Clarence W. Turner, D.....	20,390
M. C. Ridings, R.....	4,819
7. Herron Pearson, D.....	20,432
8. Jere Cooper, D.....	27,032
Allen J. Strawbridge, R.....	1,780
9. Walter Chandler, D.....	58,034
Lewis V. Phillippi, —.....	483

TEXAS

Governor

James V. Allred, D.....	elected
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U. S. Senator

Morris Sheppard, D.....	774,975
Carlos G. Watson, R.....	59,491
Gertrude Wilson, U.....	1,836

Representatives in Congress

1. Wright Patman, D.....	29,351
P. B. Gibbons, R.....	727
2. Martin Dies, D.....	39,484
3. Morgan G. Sanders, D.....	29,482
N. E. Hendrickson, R.....	1,146

CONGRESSIONAL AND STATE ELECTIONS OF 1936

4. Sam Rayburn, D.....	33,355
5. Hatton Sumners, D.....	43,954
Dee C. Humphrey, R.....	5,579
6. Luther A. Johnson, D.....	29,574
7. Nat Patton, D.....	29,011
8. Albert Thomas, D.....	61,616
Roy B. Nichols, R.....	5,456
9. J. J. Mansfield, D.....	36,968
F. W. Dusek, R.....	2,700
10. James P. Buchanan, D.....	33,631
11. W. R. Poage, D.....	31,227
12. Fritz G. Lanham, D.....	39,708
Arnold Davis, R.....	2,845
13. W. D. McFarlane, D.....	40,935
R. L. Ratliff, R.....	2,051
14. Richard M. Kleberg, D.....	39,576
Howell Ward, R.....	3,408
15. Milton H. West, D.....	29,598
J. A. Simpson, R.....	6,244
16. R. E. Thomason, D.....	26,353
17. Clyde L. Garrett, D.....	35,386
18. Marvin Jones, D.....	44,652
S. E. Fish, R.....	2,526
19. George H. Mahon, D.....	39,059
20. Maury Maverick, D.....	34,478
E. W. Clemens, R.....	12,056
James O. Rail, I.....	1,649
21. Charles L. South, D.....	37,478
Max J. Bierschwale, R.....	4,891

UTAH

Governor

Henry H. Blood, D.....	109,656
Ray E. Dillman, R.....	80,118
H. W. Peery, P.-I.....	24,754

Representatives in Congress

1. Abe Murdock, D.....	68,877
Charles W. Dunn, R.....	30,415
2. J. Will Robinson, D.....	81,119
A. V. Watkins, R.....	34,855

VERMONT

Governor

George D. Aiken, R.....	83,395
Alfred H. Heininger, D.....	53,218

Representatives in Congress

Charles A. Plumley, R.....	83,395
John B. Candon, D.....	56,334

VIRGINIA

U. S. Senator

Carter Glass, D.....	244,518
George Rohlsen.....	12,573
Donald Burke.....	8,907

Representatives in Congress

1. S. Otis Bland, D.....	20,012
William A. Dickinson, R.....	4,592
2. Norman R. Hamilton, D.....	29,269
3. Andrew Jackson Montague, D.....	28,803
P. H. Drewry, D.....	19,539
5. T. G. Burch, D.....	25,752
Taylor G. Vaughan, R.....	13,890
6. Clifton A. Woodrum, D.....	25,327
T. X. Parsons, R.....	16,404
7. A. Willis Robertson, D.....	24,790
J. Everett Will, R.....	13,814
8. Howard W. Smith, D.....	28,052
John Locke Green, R.....	8,685
9. John Flannagan, Jr., D.....	31,918
Luther E. Fuller, R.....	19,400

WASHINGTON

Governor

Clarence D. Martin, D.....	446,550
Roland H. Hartley, R.....	189,141

Representatives in Congress

1. Warren G. Magnuson, D.....	103,967
Frederick J. Wettrick, R.....	58,794
2. Mon C. Wallgren, D.....	64,214
Payson Peterson, R.....	36,508
3. Martin F. Smith, D.....	67,159
Herbert H. Sieler, R.....	25,717
4. Knute Hill, D.....	48,264
John W. Summers, R.....	35,063
5. Charles H. Leavy, D.....	76,048
Warren O. Dow, R.....	31,218
6. John M. Coffee, D.....	66,333
Paul E. Preus, R.....	31,724

WEST VIRGINIA

Governor

Homer A. Holt D.....	elected
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U. S. Senator

Matthew M. Neely, D.....	488,720
Hugh I. Shott, R.....	338,363

Representatives in Congress

1. Robert L. Ramsay, D.....	75,859
Charles J. Schuck, R.....	50,885
2. Jennings Randolph, D.....	78,856
C. S. Musser, R.....	52,847
3. Andrew Edmiston, D.....	82,059
John M. Wolverton, R.....	56,251
4. George W. Johnson, D.....	80,856
Raymond V. Humphreys, R...	70,304
5. John Kee, D.....	79,855
C. M. (Casey) Jones, R.....	44,010
6. Joe L. Smith, D.....	98,148
M. F. Matheny, R.....	55,536

WISCONSIN

Governor

Philip LaFollette, P.....	573,724
Alexander Wiley, R.....	363,973
A. W. Lueck, D.....	268,530
J. F. Walsh, U.....	27,934

Representatives in Congress

1. Thomas R. Amlie, Prog.....	49,402
Paul E. Jorgensen, R.....	44,687
2. Harry Sauthoff, Prog.....	57,874
Frank R. Bentley, R.....	34,565
3. Gardner Withrow, Prog.....	56,141
Charles Pile, R.....	38,698
4. Raymond J. Cannon, D.....	63,565
Paul Gauer, Prog.....	42,029
5. Thomas O'Malley, D.....	60,716
Carl P. Dietz, Prog.....	50,466
6. Michael K. Reilly, D.....	41,688
Frank B. Keefe, R.....	38,904
7. Gerald J. Boileau, Prog.....	48,637
Arthur W. Prehn, R.....	30,555
8. George J. Schneider, Prog....	38,721
John E. Cashman, D.....	38,138
9. Merlin Hull, Prog.....	61,593
Edwin J. Larkin, D.....	14,702
10. Bernard J. Gehrmann, Prog....	49,005
Philip E. Nelson, R.....	30,121

I. AMERICAN POLITICAL HISTORY

WYOMING

U. S. Senator

H. H. Schwartz, D.....	53,919
Robert D. Carey, R.....	45,483
George E. Geier, U.....	682
Merton Willer, C.....	88

Representatives in Congress

Paul R. Greever, D.....	56,204
Frank A. Barrett, R.....	41,362
Clarence Eklund, U.....	661
Roy Hines, C.....	86

CHRONOLOGY OF AMERICAN PUBLIC AFFAIRS

(From *The New York Times*, January 1, 1937)

PRESIDENT AND CABINET

- Jan. 1**—In accordance with declaration of Dec. 23, 1935, possibly in anticipation of an adverse Supreme Court decision in regard to the AAA, the President begins to liquidate the NRA, directly inspired by the fact that of more than 10,000 manufacturers polled by the National Manufacturers Association 82 per cent had voted against its revival in any form.
- Jan. 6**—In his annual budget message \$6,752,000,000 is asked for fiscal year of 1936-37.
- Jan. 10**—With the \$2,000,000,000 stabilization fund retained, the President signs proclamation extending Gold Reserve Act for another year.
- Jan. 24**—Soldiers' Bonus Bill is vetoed. [See National Legislation.]
- Feb. 21**—Executive order places Kure Island (Hawaii) under Navy Department.
- Feb. 29**—Neutrality Act extended until May 1, 1937.
- March 1**—The President signs the Soil Conservation Bill to replace the AAA.
- March 3**—Tax message to Congress: Recommends repeal of corporation taxes and added tax on corporation undivided profits to raise a yearly \$620,000,000 for veterans' bonus and farm program.
- March 10**—Federal Housing Administration is condemned as ineffectual, due to internal dissensions.
- March 18**—Message to Congress asks for an appropriation of \$1,500,000 to cover fiscal year 1936-37.
- March 19**—President's appeal to nation for \$3,000,000 donations for Red Cross relief.
- April 4**—Embargo on scrap tin to conserve war supply imposed by Secretary of State Hull for period April 16-July 1.
- April 15**—Allocation of funds for completion of Florida Ship Canal and Passamaquoddy tide-power project refused by President.
- April 23**—The President asks \$400,-800,000 for security program.
- May 10**—Interior Department reports an increase of 3.9 per cent in population for five years preceding fiscal year 1934-35, showing a total of 127,521,000.
- May 15**—Plan to retain PWA and RA outlined.
- May 21**—President increases tariff on certain Japanese textiles an average of 42 per cent, on account of collapse of project for reciprocal trade treaty. Japan objects the next day.
- May 27**—Under terms of Deficiency Act the President is made administrator of the \$1,425,000,000 relief fund for fiscal year 1936-37.
- June 2**—The President caustically comments on Supreme Court annulling New York State Minimum Wage Law.
- June 2**—Plan outlined to mobilize national industry and business under War Department in expectancy of war.
- June 4**—Secretary of State Hull reaffirms "hands-off" policy in Latin-American internal affairs.
- June 20**—Proclaiming that a state of war no longer exists between Italy and Ethiopia, the President lifts munitions embargo against both countries.
- June 20**—Robinson-Patman chain-store bill preventing discrimination against purchasers is signed.
- June 25**—Two bills signed: Authoriz-

CHRONOLOGY OF AMERICAN PUBLIC AFFAIRS

- ing 2,320 (maximum) planes for army; a felony for interstate strike breaking.
- June 30—Ship subsidy and contracts bills signed.
- July 2—Projected purchase of drought cattle announced by the Secretary of Agriculture.
- July 11—In opening New York Triborough Bridge, the President defends policy of national aid for such projects.
- July 15—The President holds up \$80,-000,000 worth of PWA projects by ordering new survey.
- July 22—Executive order places all postmasters under merit system.
- July 31—The President visits Quebec.
- Aug. 23—Peace nationalization of munitions industries would be ineffective in time of war—according to War Department.
- Aug. 25—Contracts for ten 1,500-ton destroyers and five 1,300-ton submarines are awarded by Navy Department.
- Aug. 25—That the President is contemplating calling a peace conference of the heads of all nations for 1937 is exclusively reported in *The New York Times*.
- Sept. 1—A gross deficit of \$2,096,-996,300 is predicted by the President for the fiscal year 1936-37.
- Sept. 3—A permanent emergency Treasury balance of \$1,000,000,000 is announced by Secretary Morgenthau.
- Sept. 4—Merit system is extended by the President to Home Owners Loan Corporation.
- Sept. 7—Imminence of war is declared by Secretary Hull in opening Third World Power Conference.
- Sept. 10—"Depression is conquered" declares the President at Charlotte, N. C. The next day he declares for "more abundant and more widely distribution of national income."
- Sept. 15—For seed-corn loans, \$10,-000,000 is now available, according to Secretary Wallace.
- Sept. 25—Acting Secretary of War Harry H. Woodring succeeds the late George H. Dern as Secretary.
- Oct. 7—Under reciprocal trade treaties, Secretary Hull reports a steady increase in agricultural exports.
- Nov. 18—The President, on board the cruiser *Indianapolis*, sails on his peace mission to the Pan-American Conference at Buenos Aires.
- Nov. 22—In a radio message from the ship he hails the New York World's Fair of 1939 as "a challenge to all Americans who believe in the destiny of the nation."
- Nov. 30—The Navy Department completes plans for the building of two mighty superdreadnoughts to cost \$50,000,000 each.
- Dec. 1—The State Department curbs the marriages of diplomats with aliens.
- Dec. 3—In Washington assembled Mayors and representatives of eleven industrial cities plead with the President by cable to halt cuts made by the WPA.
- Dec. 28—The State Department issues a license to the Spanish Popular Front Government of planes valued at \$2,777,000—action held to be legal under the Neutrality Law.

COURT RULINGS

- Jan. 6—The Supreme Court, 6 to 3, holds AAA to be unconstitutional, and, Jan. 13, orders the return to processors of \$200,000,000 of AAA taxes impounded since Jan. 6.
- Feb. 10—Louisiana tax on newspapers unanimously invalidated by the Supreme Court on ground that it curbs freedom of the press—a constitutional right.
- March 3—On ground that it violated the National Constitution (Article I, Section 6, of Fourteenth Amendment), the New York Court of Appeals annuls State law for regulation of minimum wages for women.
- March 10—The Supreme Court reserves decision in regard to Guffey Coal Bill for regulation of wages, hours and collective bargaining, but on May 18 invalidates the bill.
- March 11—Senate Lobby Committee subpoena is invalidated by District of Columbia Supreme Court, as

I. AMERICAN POLITICAL HISTORY

Fourth Amendment to Constitution is violated.

April 2—Gold Reserve Act is upheld by Federal Court of Appeals as it applies to alien gold hoardings in United States. Under this ruling Federal agents seize \$1,250,000 held by a Swiss corporation in New York, June 22.

April 18—Denouncing German moratorium as applied here, U. S. District Court holds that \$886,945,-810 are collectable.

May 18—Provisions which created Resettlement Administration in Federal Emergency Appropriations Act of 1935 are held unconstitutional by U. S. Court of Appeals for D. C.

May 25—Municipal Bankruptcy Act empowering political civic units to adjust indebtedness in Federal Courts is held to be unconstitutional by the Supreme Court.

June 5—PWA's power program declared valid by D. C. Court.

June 10—National Labor Relations Act declared unconstitutional by the Texas Court of Western Federal District.

June 13—Chain-gang sentence of Angelo Herndon, inflicted under 1871 Insurrection Law, is upheld by the Georgia Supreme Court.

June 15—That the NLR Board has no power to regulate employer-employee relations is the opinion of the U. S. Fifth Circuit Court of New Orleans.

June 26—Railroad Pension Law of 1935 providing for taxes to finance employes' pensions declared unconstitutional by D. C. Supreme Court.

June 30—That Congress has no power to regulate employer-employee relations unless interstate laws are violated is the opinion of the Sixth U. S. Circuit Court of Appeals at Cincinnati.

July 2—New York State law outlawing suits for alienation of affections is held unconstitutional by Appellate Division of Supreme Court at Brooklyn.

July 6—The NLR Board is restrained from investigating labor conditions in assembly plant of General

Motors by U. S. Circuit Court of Appeals at St. Paul.

Nov. 23—The constitutionality of the New York Employment Insurance Law is upheld by the Supreme Court—4 to 4.

Dec. 21—The President's power to impose embargoes on munitions in the Chaco war between Bolivia and Paraguay is upheld by the Supreme Court, as of 1934.

RECOVERY MEASURES

Jan. 11—Bankers warned by Jesse H. Jones, chairman of RFC, that the government will continue its small loan policy until banks cease discriminating policy favoring heavy borrowers.

Feb. 28—Railroads ordered to cut passenger fares to 2 cents per mile with Pullman rates at 3 cents, by Interstate Commerce Commission—order effective June 2.

March 2—Largest national financial operation since the World War: Bonds and Government notes valued at \$1,250,000,000 placed on sale by Treasury are immediately oversubscribed.

March 18—Stocks have risen on the average of 55 per cent in the last twelve months, according to stock market reports.

March 20—In first twenty days of March, income tax returns show 28 per cent higher than for same period of 1935.

April 22—On account of Neutrality Act United States exports to Italy have dropped \$1,266,522 since middle of January.

May 14—At a cost of \$80 per month per person WPA reports an average stipend of \$33 per month per person.

June 1—Treasury announces oversubscription for \$600,000,000 bonds of 2½ per cent, and \$400,000,000 in notes at 1½ per cent.

June 20—New York State Old Age Assistance project, approved by Social Security Board will receive \$7,500,000 from United States Treasury.

June 30—With ending of fiscal year the national debt totals around \$34,000,000,000. The pre-war debt was

CHRONOLOGY OF AMERICAN PUBLIC AFFAIRS

\$1,300,000,000; the post-war debt, \$28,750,000,000. At the end of 1935 the national debt was \$30,555,791,967, thus passing the thirty billion mark for the first time in history.

June 30—New York City receives \$36,697,500 grant from WPA.

July 14—A 50 per cent reserve increase requirement of member banks, on and after Aug. 15, is announced by the Federal Reserve System Board of Governors.

Aug. 19—A national income gain of \$4,000,000,000 in 1935 over 1934 is reported by the National Industrial Conference Board.

Aug. 28—Farmers' cash income for July, as reported by the Agricultural Department, was \$735,000,000—highest for any month since 1929.

Sept. 15—Insurance companies' assets rose \$3,000,000,000 from first of January, 1933, to end of fiscal year, 1935-36, according to report to President Roosevelt.

Sept. 30—A total of \$2,308,301,208 has accrued to New York State from New Deal.

Oct. 1—So far 1936 has been the first year since 1881 without a bank failure, according to President Roosevelt, who also predicts a balanced budget.)

Nov. 16—The postoffice sends out 3,000,000 employment blanks under the Federal Social Security Act—with 600,000 coming to New York City.

Nov. 26—The Treasury announces that in the last twenty-one months there has been a net inflow into the country of \$2,281,659,000.

Nov. 29—The Treasury announces that in 1935, double taxes gave the States and Federal Governments \$2,271,440,000 with \$1,655,000,000 going to the former.

Dec. 22—The total revenue for New York State for the current fiscal year is estimated by the Albany Treasury at \$332,546,000.

Dec. 24—Christmas buying is estimated at 10 per cent in advance of last year's, while grain prices reached (Dec. 14) the highest in seven years.

NATIONAL LEGISLATION

Jan. 3—The Seventy-fourth Congress assembles in second session, and at night hears the President's message in joint session delivered in person: he deals with the hypothetical challenge of organized industry and business and compares his problems to those solved by the Constitutional Convention of 1787; he condemns those who would seek to re-establish the power of selfishness.

Jan. 7-Feb. 20—The Nye Munitions Committee resumes its hearings begun in May, 1934; on the hypothesis that leading bankers pushed the United States into the World War, it seeks to establish the need for neutrality on their testimony; Senator Nye's attitude is hostile toward the memories of President Wilson and Secretary Lansing; legislation curbing arms factories is drafted.

Jan. 27—The Bonus Bill becomes law by the Senate (every member voting) overriding the President's veto; Jan. 10, it had passed the House, 355-59; Jan. 20, the Senate, 74-16. It calls for immediate disbursement of nearly \$3,500,000,000 in interest-bearing "baby bonds" to veterans, redeemable at once in cash. By March 4, 2,155,000 have applied for bonus, 20,000 applications coming from Italy; 14,540 women are eligible. On June 15, \$1,500,000,000 in bonds are paid.

Feb. 18—The Neutrality Bill is passed by Senate.

Feb. 19—Inquiry into the Townsend plan voted by the House.

Feb. 27—Both Houses vote the President's \$500,000,000 Soil Conservation Bill to replace the outlawed AAA. It becomes law March 1.

March 23—The highest Army Appropriation Bill, calling for \$611,362,604, is passed by Senate.

April 17—The Senate impeaches and removes Judge H. L. Ritter of Southern District of Florida.

April 23—Puerto Rican independence is provided for in a Senate bill.

I. AMERICAN POLITICAL HISTORY

April 29—The House passes Corporation Tax Bill calculated to raise \$803,000,000.

May 1-8—Navy Supply Bill calling for \$509,125,806 is passed successively by House and Senate.

May 11-June 1—Deficiency Appropriation Bill providing \$1,425,000-000 for work relief and \$300,000,000 for grants, loans, &c., for the fiscal year is passed successively by House and Senate.

May 13—The Frazier-Lemke bill is defeated by the House.

June 4—The House elects as Speaker in place of Joseph Byrns, (deceased) William Brockman Bankhead of Alabama.

June 15—Anti-lynching bill is demanded by 218 members of the House.

June 16—Substitute for outlawed Vinson-Guffey Coal Bill is passed by House; also Wagner Slum Clearance and Low Cost Housing Bill.

June 19—Compromise tax bill is passed by House; by the Senate the next day.

June 19—The House passes bill making it a felony to carry strike-breakers across State lines.

June 21—Having made a record by appropriating more than \$20,000,000,000, the Seventy-fourth Congress adjourns. (For Federal Government Events After Adjournment of Congress, see CHRONOLOGY, pp. 144-157.)

POLITICS

Jan. 16—Ex-President Herbert Clark Hoover in speech at Lincoln, Neb., calls administration's policy the "economy of scarcity" and offers three-point program for one of plenty and the restoration of lost foreign markets; at Colorado Springs, March 7, he says "planned economy endangered Constitution" and "mortgaged" youth; in speech at Republican National Convention at Cleveland, June 10, he likens New Deal to an incipient dictatorship.

Jan. 25—Alfred E. Smith, 1928 Democratic Presidential candidate, denounced the New Deal; June 21—Calls on the country to repudiate

President Roosevelt; Oct. 1—Urges Democrats to support Landon, Republican candidate; Oct. 2—Republicans claim that Smith's attitude will switch 3,000,000 Democratic votes; Oct. 24—Smith meticulously attacks the New Deal at Pittsburgh.

March 23—A third party is threatened by the Townsend group, and the next day Robert Clement, co-founder of Townsend Old-Age Revolving Pension, withdraws from organization.

April 11—President Green, A. F. of L., urges labor unionists to support candidates favoring laws that are court-proof; May 5, he comes out for Roosevelt.

April 23—Law removing stigma of illegitimacy asked by Governor Lehman of New York State.

May 3—Politics is designated "Public Enemy No. 1" by J. E. Hoover of the Department of Justice.

May 14—For Red investigation of public schools \$15,000 is voted by New York Legislature.

June 10-12—Republican National Convention, at Cleveland, Ohio, on first ballot unanimously nominates Governor Alfred Landon of Kansas for President; also, on first ballot, Colonel Frank Knox of Chicago for Vice President, after Senator Vandenberg of Michigan had declined.

June 14-Oct. 30—Led by International Ladies Garment Workers Union, with a membership of 200,000, other unions, said to represent 3,000,000, have more or less officially declared adhesion to President Roosevelt.

June 17—The Rev. Charles Edward Coughlin, the Detroit Catholic priest of Canadian birth, organizer of the National Union for Social Justice and former supporter of President Roosevelt, launches a trial balloon for a third party.

June 23-27—Democratic National Convention, at Philadelphia, nominates President Roosevelt by acclamation for re-election; John Nance Garner is renominated for Vice President.

June 28—Earl Browder and James W.

CHRONOLOGY OF AMERICAN PUBLIC AFFAIRS

- Ford, a Negro, are nominated respectively for President and Vice President by the Communists.
- June 30—Governor Lehman of New York is finally persuaded to renounce personal desires and to be the Democratic candidate for re-election.
- July 5—A People's party is formed from Reactionary Socialists in New York with Louis Waldman as leader.
- July 7—The Democratic campaign is being directed, as four years ago, by James A. Farley, on leave from the Postmaster Generalship.
- July 9—John L. Lewis, labor leader [see Vagaries of Labor], declares that labor will support the Roosevelt policies.
- July 16—Father Coughlin, who suggested a third party on June 17, calls President Roosevelt "liar and betrayer" at the Townsend old-age pension convention convened at Cleveland; Aug. 1—In a radio speech he visions "revolution" if Landon is elected; Aug. 2—He denounces the President as "Communist"; Sept. 25—The Archbishop of Cincinnati rebukes Father Coughlin and on Oct. 8 Mgr. John A. Ryan of the Catholic University does the same; Oct. 9—Father Coughlin evasively recants his characterizations of the President.
- July 26—Norman Thomas, successively Socialist candidate for Mayor of New York City, for Governor of New York State and for the Presidency, declares that Roosevelt and Landon deliberately ignore the "war peril."
- July 31—William Lemke, Unionist candidate for President, would limit incomes to half a million by confiscatory tax.
- Aug. 22—Governor Landon pleads for a return to the simple American life of long ago—and of the present Middle West. Sept. 22—He pledges cash aid to farmers if elected. Sept. 26—He pledges old age pensions and denounces Social Security Act. Oct. 9—He promises a balanced national budget. Oct. 14—He declares that the administration has impeded recovery. Oct. 19—He pledges his party to restore foreign markets. Oct. 20—He accuses the administration of attempting to discredit the Supreme Court. Oct. 22—He charges that the President is using "the people's money to secure his re-election." Oct. 29—He charges that the President dodges the "real issues."
- Sept. 4—"The credit of the nation is on a sounder basis than ever before," President Roosevelt declares. Oct. 8—He begins a personal tour for re-election. Oct. 23—By radio broadcast he reaffirms adhesion to capitalistic principles. Oct. 31—At the New York Madison Square Garden he condemns the foes of rationalized capitalism and pledges his administration to continue a victorious fight for the New Deal.
- Sept. 15—The ancient adage, "As Maine goes so goes the nation," is revived by a Republican victory in Maine.
- Sept. 29—Justice William F. Bleakley is nominated by New York Republicans for Governor.
- Oct. 5—President Green of the A. F. L. says that Roosevelt will receive the bulk of the Labor vote.
- Nov. 3—President Roosevelt is re-elected when the electors poll their votes, Dec. 14: 523 for him and 8 for Landon. The popular vote is 26,484,229, against 17,469,771. Landon secures only the electors of Maine and Vermont. The administration gains 4 Senators, 14 Congressmen and 26 State Governors. The Republicans lose 8 seats in the Senate and 16 in the House, and elect 5 Governors. In New York Governor Lehman is re-elected.

I. AMERICAN POLITICAL HISTORY

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ANTIQUARIAN SOCIETY, Worcester, Mass.
AMERICAN BAPTIST HISTORICAL SOCIETY, Upland Avenue, Chester, Pa.
AMERICAN CATHOLIC HISTORICAL ASSOCIATION, Catholic University, Brookland Station, Washington, D. C.
AMERICAN HISTORICAL ASSN., 40 Independence Ave., Washington, D. C.
AMERICAN IRISH HISTORICAL SOCIETY, 132 East 16th St., New York City.
AMERICAN JEWISH HISTORICAL SOCIETY, Broadway at 122nd Street, New York City.
AMERICAN NUMISMATIC SOCIETY, 156th Street at Broadway, New York City.
AMERICAN SCENIC AND HISTORIC PRESERVATION SOCIETY, 287 Convent Avenue, New York City.
AMERICAN SOCIETY OF CHURCH HISTORY, 5757 University Ave., Chicago, Ill.
CANADIAN HISTORICAL ASSN., Ottawa, Canada.
FREETHINKERS OF AMERICA INC., 317 East 34th Street, New York City.
HISPANIC SOCIETY OF AMERICA, 156th St., W. of Broadway, New York City.
HOLLAND SOCIETY OF NEW YORK, 90 West Street, New York City.
HUGENOT SOCIETY OF AMERICA, 2 West 45th Street, New York City.
METHODIST HISTORICAL SOCIETY, 150 Fifth Ave., New York City.
MISSISSIPPI VALLEY HISTORICAL ASSN., Cedar Rapids, Iowa.

NEW ENGLAND HISTORICAL GENEALOGICAL SOCIETY, 9 Ashburton Place, Boston, Mass.
PRESBYTERIAN HISTORICAL SOCIETY, 520 Witherspoon Building, Philadelphia, Pa.
PROPORTIONAL REPRESENTATION LEAGUE, 309 East 34th Street, New York City.
SOCIETY FOR THE PRESERVATION OF NEW ENGLAND ANTIQUITIES, 141 Cambridge St., Boston Mass.
STEUBEN SOCIETY OF AMERICA, 369 Lexington Ave., New York City.
THOMAS PAINE NATIONAL HISTORICAL ASSN., North Ave., New Rochelle, N. Y.
UNITED STATES CATHOLIC HISTORICAL SOCIETY, 346 Convent Ave., New York City.
WOODROW WILSON FOUNDATION, 8 West 40th Street, New York City.

POLITICAL

LEAGUE FOR INDUSTRIAL DEMOCRACY, 112 E. 19th Street, New York City.
NATIONAL LEAGUE OF WOMEN VOTERS, 726 Jackson Place, Washington, D. C.
NATIONAL MUNICIPAL LEAGUE, 309 E. 34th Street, New York City.
WOMEN'S NATIONAL DEMOCRATIC CLUB, INC., Hotel Alamac 71st. Street and Broadway, New York City.
WOMEN'S NATIONAL REPUBLICAN CLUB, 3 West 51st. Street, New York City.

DIVISION II

INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

THE UNITED STATES AND EUROPE

BY WILLIAM T. STONE

VICE PRESIDENT, FOREIGN POLICY ASSOCIATION

AMERICAN ISOLATIONIST POLICY

The desire to avoid involvement in the turbulent affairs of Europe continued to dominate American policy throughout the year 1936. As the swift current of events carried Europe from the Italo-Ethiopian conflict to the Rhineland crisis of March and the civil war in Spain, the Roosevelt Administration struggled to maintain its course of strict neutrality while striving to consolidate political and economic unity among the 21 republics of the American continents. At the same time the Administration continued its efforts to expand the area of free trade through Secretary Hull's reciprocal tariff agreements. Despite the gradual recovery of world trade and the general approval which greeted the temporary stabilization of currencies in September, American public opinion remained predominantly isolationist.

NEUTRALITY AND THE ITALO-ETHIOPIAN CONFLICT

When Congress met in January, 1936 the Italo-Ethiopian conflict had been in progress for more than three months. The British fleet was still in the Mediterranean and the League of Nations, having solemnly declared Italy an aggressor, was wrestling with the problem of sanctions. In a report published Feb. 12, the oil experts committee of the League declared

that an oil embargo applied by all League states would curb Italy in three and a half months, provided that the United States limited its petroleum exports to the pre-1935 level.

The issue thus squarely raised was presented too late. In the autumn months of 1935 all sections of American opinion had lined up in support of President Roosevelt's neutrality proclamations and there appeared to be strong sentiment in favor of extending the temporary act of Aug. 31, 1935 to cover embargoes on raw materials, including oil. Congress made it plain, however, that this sentiment had been swept away by the curious Hoare-Laval deal, with its plan to restore peace by giving Italy virtually all that she sought, despite the moral condemnation of the League. On Feb. 18 the Senate, following the example of the House on the previous day, voted to extend the neutrality resolution to May 1, 1937, without provisions for limitation of raw materials.

The new resolution, approved by President Roosevelt Feb. 29, went beyond the earlier act but fell short of the provisions recommended by the Administration. In addition to the embargo on "arms, ammunition and implements of war," the February resolution forbade the granting of loans or credits to all belligerents in time of war and tightened the reg-

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ulations governing transport of munitions on American vessels. It gave the President no discretion to apply embargoes against an "aggressor" state, and failed to incorporate those provisions in the Administration's own draft which would have authorized the President to limit exports of raw materials to a normal peace time quota. A small bloc led by Senators Nye and Clark in the Senate and Representative Maverick in the House, committed to "mandatory" neutrality, waged a losing fight to add amendments restricting trade in raw materials, requiring exporters to ship at their own risk and limiting travel in war zones. Thus, in meeting the situation presented by the Ethiopian conflict, President Roosevelt was compelled to renew the plea which he had made to the American people in October: "That they so conduct their trade with belligerent nations that it cannot be said that they are seizing new opportunities for profit or that by changing their peace-time trade they give aid to the continuation of war."

In less than three months the Italo-Ethiopian conflict had terminated with the complete collapse of Ethiopia and the flight of the Negus, leaving the League of Nations the onerous task of liquidating its first experiment in collective action. On June 20, after sanctions had been lifted by the League Assembly, President Roosevelt formally declared that a state of war no longer existed, and revoked his neutrality proclamation. Washington took no step, however, to indicate recognition of the new Empire proclaimed by Mussolini.

THE RHINELAND CRISIS

While European chancelleries were still occupied with the Italo-Ethiopian conflict, another major crisis served to emphasize once more the extent of American isolation. On March 7, without previous warning, Chancellor Hitler announced the occupation by German troops of the Rhineland zone demilitarized by the Versailles Treaty, and on the same day, as a "symbolic gesture," 20,000

German troops marched across the bridgeheads on the Rhine. Throughout the period of diplomatic tension which accompanied the meetings of the League Council in London and Geneva, the United States maintained an attitude of strict detachment, and there was no suggestion from Europe that this country should participate, even informally, in the meetings in London and Geneva.

THE CIVIL WAR IN SPAIN

The outbreak of civil war in Spain on July 18 precipitated the third, and perhaps the most dangerous, crisis confronting Europe in the course of 1936. Within the first few weeks it became apparent that the conflict on the Iberian peninsula might easily spread to the larger battleground of Europe, where the struggle between rival ideologies had already burst the bounds of national frontiers. The policy of non-intervention, sponsored by France and Great Britain, was designed to prevent the alignment of European powers behind the two contending factions, and while it failed to stop outside aid to both the rebels and loyalists, at least it served to stave off open conflict between the two rival blocs. In pursuing this policy, the European powers departed from the accepted rules of international law, under which the legally constituted government of Spain would have been able to purchase arms and ammunition from other countries.

Upon the outbreak of hostilities in Spain, the United States assumed the traditional position of non-interference in the internal affairs of a friendly state. The American Government was not invited to participate in the non-intervention agreement and the Department of State made it clear that it intended to act independently of other powers. Its first concern was to safeguard American nationals whose lives might be endangered, and on July 21 Secretary Hull ordered the American Embassy in Madrid to be opened as a place of refuge for American citizens. On Aug. 3, and repeatedly thereafter, the United States Government urged

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American citizens to leave Spain and warned those who remained that they did so at their own peril. Warships and merchant vessels were ordered to assist in evacuation, and by November, when the American embassy was closed by Eric C. Wendelin, the Charge d'Affaires, less than 100 American citizens remained in the besieged capital. Following this wholesale evacuation, United States naval vessels were withdrawn from Spanish waters. Formal protests were made to the Spanish Government against the seizure of American property without compensation and against a proclamation creating war zones around rebel ports. On Aug. 26 the Secretary of State informed Madrid that the United States could not "admit the legality of any action on the part of the Spanish government in declaring such ports closed unless that government declares and maintains an effective blockade of such ports." This position was reaffirmed three months later when the Rebel junta at Burgos announced its intention to bombard the Loyalist port of Barcelona.

The attitude of the United States with respect to shipment of arms to Spain was set forth in a public statement on Aug. 11 affirming the desire to remain completely neutral. The statement pointed out that the existing neutrality act "has no application in the present situation since that applies only in the event of war between and among nations." While Americans were thus legally free to sell munitions to either side in Spain, the State Department announced as "its established policy" a determination to "scrupulously refrain from any interference whatsoever in the unfortunate Spanish situation" and to use its moral influence to secure observance of this policy. Until late in December the "moral influence" of the government, which has power to license munitions firms, had been sufficient to discourage shipment of war materials to Spain.

On Dec. 28, however, the State Department was compelled to issue a license for the shipment of airplanes, airplane engines and parts, valued at

\$2,277,000, and it became apparent that moral suasion would not be sufficient to curb the flow of munitions. With Congress about to convene, the Administration took steps to amend the neutrality act so as to forbid arms shipments in civil wars as well as in international wars. The State Department took occasion to express to foreign governments its regret that it had no discretion in issuing a license for the shipment referred to under the terms of the neutrality law as it stood on the statute books at the time.

By pursuing its "traditional" policy independently of other governments, the United States followed a course of action which ran closely parallel to the non-intervention policy of Great Britain and France. In December the United States threw its moral support behind a new Anglo-French proposal for mediation in Spain to terminate the civil war. In setting forth the American position, the State Department expressed its "very earnest hope" that the mediation proposal would accomplish its purpose. The State Department added, however, that "this expression represents no deviation from our well-known policy of non-intervention in the affairs of other countries. It simply voices . . . the deep distress of the American people that Spain should be involved in a bitter conflict marked by heavy loss and indescribable suffering."

REGIONAL PEACE PROGRAMS

While perhaps out of place in a survey of relations with Europe, brief mention must be made of the Inter-American Conference for the Maintenance of Peace, which assembled at Buenos Aires on Dec. 1. This gathering of the 21 American republics served to indicate the trend of American foreign policy even more sharply than statements addressed directly to Europe. Emphasizing the importance which he attached to this effort to organize regional cooperation in the interests of peace, President Roosevelt traveled 6,500 miles to attend the opening session in the Argentine capital and to sound the

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keynote for the entire conference. "This," he said, "is no conference to form alliances, to divide the spoils of war, to partition countries . . . it is to assure the continuance of the blessings of peace." Our formula, he suggested, must be found in "strengthening of the processes of constitutional democratic governments" which will permit us to prevent wars in this hemisphere. After referring to the countries of the Old World as "rent asunder by old hatreds and new fanaticisms" the President added this significant warning: the nations of the New World must make it clear "that we stand shoulder to shoulder in our final determination that others who, driven by war madness or land hunger might seek to commit acts of aggression against us, will find a hemisphere wholly prepared to consult together for our mutual safety and our mutual benefit." (See "United States Relations with Latin America," pp. 82-87.)

THE LONDON NAVAL CONFERENCE

In a world torn by strife and conflict, and burdened by staggering military budgets far above those of 1914, the naval limitation conference which was sitting in London as the year 1936 opened must have seemed, even to some of its official participants, a strange anachronism. The Washington Treaty of 1922—heralded at the time as the dawn of a new age of peace—had been denounced by Japan and was due to expire, along with the London Treaty of 1930, on the last day of 1936. Each of the powers represented at the conference table (Great Britain, United States, Japan, France and Italy) had embarked on a vast naval building program and each was spending more on its naval armament than at any time since the World War. Moreover, the situation in the Pacific area in which the three major powers were vitally interested had become more acute with the apparent expansion of Japanese influence on the Asiatic mainland.

The atmosphere of pessimism which surrounded the conference before its

opening session (Jan. 9, 1936) was not dispelled during the first phase of the discussions which were concluded on Jan. 15 with the withdrawal of the Japanese delegation. Unable to win support from any of the other powers for their demand for "equality of armaments," the Japanese broke off negotiations and left the remaining delegates to conclude such agreements as they could between themselves. Two months later, on March 25, the United States, France and the British Empire formally signed the London Naval Treaty of 1936 and a special protocol expressing hope for further limitation in the future.

Opinion was divided as to the practical value of the new agreement, which was confined largely to technical aspects of naval rivalry and emphasized "qualitative" rather than "quantitative" limitation. The three signatories agreed, for a period of six years, to accept qualitative limitations, fixing the maximum size of ships in the different categories (capital ships, aircraft carriers, large and small cruisers, destroyers and submarines) but not placing any limit on the number of vessels within the categories. They also agreed to give advance notice and to exchange full information on building programs. In the opinion of some observers the very fact that a treaty could be negotiated in the present international atmosphere was a noteworthy achievement. To others, the failure to solve any of the fundamental political differences which lie at the root of naval competition left the door wide open to future complications and continued naval rivalry. One particular point of danger, these critics pointed out, was the failure to renew the provisions of the Washington Treaty forbidding fortifications and new naval bases in the Pacific, thus leaving the Pacific powers free to fortify their island possessions. As the year came to a close, portents of a new naval race were seen in the new building programs calling for renewed construction of huge capital ships by all of the principal powers.

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RELATIONS WITH LEAGUE OF NATIONS

While unwilling to cooperate with the League of Nations in political matters, the United States, as in previous years, continued to collaborate in economic, social and humanitarian activities. An American delegation participated in the conferences of the International Labor Office at Geneva from June 4-24. The United States was also represented at the Conference for the Suppression of the Illicit Traffic in Dangerous Drugs, which met under League auspices June 8 to 26. American representatives also served on a number of permanent committees, including the Opium Advisory Committee, the Economic Committee, the Health Organization, the Committee on Traffic in Women and Children and the Committee for Assistance to Indigent Foreigners. (See "The League of Nations and Associated Agencies," pp. 96-106.)

RECIPROCAL TRADE AGREEMENTS

In contrast to the mounting tension which characterized political relations in 1936, unmistakable signs of economic recovery became apparent during the year. Domestic production in the United States showed notable gains, unemployment declined and foreign trade climbed steadily upward. In the latter field exports from the United States for the first ten months of 1936 reached a total of \$1,998,000,000, as compared with \$1,790,000,000 during the same period in 1935. Imports likewise increased from \$1,755,000,000 in 1935 to \$1,967,000,000 in 1936.

The extent to which the Roosevelt Administration's program was responsible for trade changes during the year could not be determined until more detailed statistics were available. By the end of 1936 trade agreements had been concluded with 15 countries, including five European states, but none of the pacts had been in operation long enough to warrant conclusions with respect to long-term effects. Tentative figures for the first six months of 1936 revealed that exports to six countries

with which trade agreements were in force on or before Jan. 1, 1936 had increased 13.6 per cent over the previous year, whereas exports to all other non-agreement countries had increased 12.4 per cent during the same period. Imports from the same trade agreement countries had risen 27.3 per cent as compared with 13.2 per cent from non-agreement countries. Thus the agreements appeared to be accomplishing their purpose—the lowering of barriers so as to permit freer response to the normal economic forces which give rise to commerce. To many economic observers, the relatively large increase in imports appeared to be a healthy reversal of the post-war trend and one more in keeping with the creditor position of the United States. The fallacy of the "favorable" trade balance, which could only be maintained by doubtful foreign lending, had been demonstrated in 1929.

The crucial test of the Roosevelt-Hull trade agreement program will lie in its ability to reduce obstacles to trade with the major powers of Europe. To date, France is the only great European power with which the United States has concluded a trade agreement. But as the year drew to a close, the Administration was encouraged by the indorsement of its policies at the November elections, and was looking forward to renewal of the Trade Agreements Act by Congress and negotiations with other important commercial nations.

CURRENCY STABILIZATION

On the economic front, the outstanding event of the year occurred on Sept. 26, when the government of France announced its intention to reduce the gold content of the franc. This momentous decision was made possible by a monetary agreement with the United States and Great Britain under which the three democracies declared their intention "to maintain the greatest possible equilibrium in international exchange" and "to restore order in international economic relations."

Devaluation of the franc had been advocated by leading economists for

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nearly three years as a necessary step toward stabilization. But in France no government had dared to take a step which many Frenchmen feared would lead to a repetition of the inflation of 1926. When the Blum Government finally determined to act, however, and when the support of London and Washington had been assured, the resulting accord was hailed as an important and effective contribution toward world recovery. It did not accomplish permanent stabilization, but it did afford a new basis for economic cooperation between the world's leading commercial nations. In London, the agreement was praised as demonstrating the capacity of the democracies for leadership in world affairs. In Berlin the accord created a sensation and aroused widespread discussion as to the future of the mark and other controlled currencies. Germany refused to devalue, however, although Italy took steps to align the lira with the other leading currencies.

The position of the United States

was set forth by Secretary of the Treasury Morgenthau in a statement made public simultaneously with the announcements from London and Paris. The United States welcomed the "readjustment" of the franc as a necessary step toward the achievement of "a lasting equilibrium" between the various economic systems. The three governments intended to use their resources to avoid as far as possible any disturbance of the basis of international exchange, and to maintain the greatest possible equilibrium. They reaffirmed their intention to develop international trade, and favored relaxation and eventual abolition of quotas and exchange controls.

Coming in a period marked by political antagonisms and unrest, the currency agreement of September, 1936 appeared to offer a first tentative step toward economic sanity and appeasement. But whether it marked a new departure, or merely a transitory shift in the balance of economic forces, time alone will tell.

UNITED STATES RELATIONS WITH LATIN AMERICA

By GRAHAM H. STUART

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GENERAL

The year 1936 was a year of increasingly satisfactory relations between the Republics of the Western Hemisphere. The dispute between Bolivia and Paraguay, although not settled, became a subject for diplomatic negotiation and conference methods. The United States made further progress in its program of reciprocal trade agreements. The overshadowing event of the year was the Inter-American Peace Conference called by President Roosevelt and held in Buenos Aires in December.

INTER-AMERICAN PEACE CONFERENCE

President Roosevelt's Proposal.

—In his opening speech to the United States Congress on Jan. 3, 1936, President Roosevelt declared that "at no

time in the four and a half centuries of modern civilization in the Americas had there existed, in any year, any decade or any generation, in all that time, a greater spirit of mutual understanding, of common helpfulness and of devotion to the ideals of self-government than exists today in the twenty-one Republics. . . . This policy of the 'good neighbor' among the Americas is no longer a hope—it is a fact, active, present, pertinent and effective."

To give further concrete illustration of his intention to continue this policy, President Roosevelt, on Jan. 30, sent personal letters to the presidents of the other American republics proposing that an extraordinary inter-American conference be summoned to meet in Buenos Aires, subject of course to the wishes of the Govern-

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ment of the Argentine Republic, to determine how the maintenance of peace among the Americas might best be safeguarded. As a tentative suggestion to this end he proposed that the conference give attention to three possible lines of approach: first, by prompt ratification of existing peace agreements, second, by their amendment in accordance with experience, and third, by the creation of new instruments of accord.

The Latin American governments were prompt and enthusiastic in their replies. The government of Argentina was pleased to offer its capital. Most of the replies indicated a willingness to follow the general program suggested by President Roosevelt. The noticeable exceptions were Chile and Guatemala; the former desired definite action in favor of moral disarmament and greater economic reciprocity, while the latter proposed a general treaty of solidarity and mutual cooperation.

The Preliminary Agenda.—On May 2, Secretary of State Hull suggested as definite subjects to be considered: further action by treaty for the maintenance of peace, neutrality and its problems, improvement of inter-American communication, the exchange of teachers and students, and inter-American trade. A sub-committee, consisting of the Ambassadors of the Argentine and Mexico and the Minister of Guatemala considered these and other suggestions and formulated the program for the conference under the following heads: I. Organization of Peace, II. Neutrality, III. Limitation of Armaments, IV. Juridical Problems, V. Economic Problems, and VI. Intellectual Cooperation.

It should be noted that one of the weaknesses of existing machinery for the maintenance of peace has been the failure of certain states to ratify the agreements which have been signed. For example; neither of the belligerents in the recent destructive war in the Chaco had ratified the inter-American conciliation and arbitration treaties of 1929; therefore, one of the ways to organize peace was recognized to be the considera-

tion of measures to secure the prompt ratification of treaties and conventions for the maintenance of peace. Also under the first subject it was proposed to consider causes of controversy and measures for their possible solution, which opened up unlimited possibilities of discussion. It should further be noted that the republics of the Western Hemisphere were, for the most part, parties not only to five different treaties of a purely continental character but to four instruments of a universal character, all designed for the maintenance of peace, and also to some half dozen declarations both against war and the forcible acquisition of territory. The conference proposed to consider the possibility of coordinating these instruments and incorporating them in one instrument.

Another suggestion which received considerable attention was the possibility of creating an Inter-American Court of Justice. Central America had set up a court in that area in 1907 which had lasted ten years and Mexico had suggested an American Court of International Justice in 1933. When Secretary of State Hull let it be known that the United States would not oppose such an agency, the subject became an important part of the agenda.

The Neutrality Question.—The question of neutrality was one of the most important problems to be considered by the Conference, and the one that particularly interested the American delegation. At the Sixth International American Conference in 1928, a convention on maritime neutrality had been signed reproducing substantially the Hague Convention of 1907. The outbreak of the war between Bolivia and Paraguay in 1933 showed the gaps in the existing legislation. Argentina, Brazil and the United States imposed embargoes on the sale of arms and ammunition to both belligerents and the United States law also forbade American ships to carry such equipment and prohibited the sale of war supplies.

A composite memorandum following the United States policy was prepared and circulated, providing for

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embargoes on arms, ammunition and implements of war and on loans and credits to belligerents. It committed all parties to the principle of pacific settlement of disputes and required an unequivocal declaration of war before the beginning of hostilities. Neutrals were permitted to impose trade restrictions against belligerents as they saw fit. A permanent consultative committee composed of the heads of the various foreign offices was to coordinate action under the pact. The treaty was to apply only to American states and an escape clause was provided to relieve members of the League of conflicting obligations.

Economic Problems.—Under this heading an elaborate agenda was prepared. The Seventh Pan American Conference held in Montevideo in 1933 and the Pan American Commercial Conference held in Buenos Aires in May, 1935 had considered the general question of barriers to international trade, and a comprehensive resolution passed in 1933 was sustained in the later meeting. It was now proposed to consider every phase of trade restriction which might hinder closer economic relations and if possible inaugurate substantial reforms. Every type of trade agreement was to be taken up—the question of the most-favored-nation clause, exchange control and a tariff treaty.

Communications.—An important subsidiary subject was the improvement of means of communication in the Western Hemisphere. The Pan American Commercial Conference of 1935 had approved a Pan American tourist passport and transit passport for vehicles to be issued free of charge with special visé services to facilitate travel both by common carriers, and by private automobiles, bicycles and airplanes. It was noted that substantial progress had been made towards the carrying out of the proposed Pan American Highway system. For example, on July 1, 1936, the highway from Mexico City to Laredo, Tex. was formally dedicated after having been in use for several months. This magnificent road runs for over 750 miles from the United

States border through dry plains, a subtropical jungle and towering mountain peaks to Mexico City. The paved roadway is 21½ feet wide. It required the construction of over 3,000 bridges and culverts and although it runs from practically sea level to over 8,000 feet, the whole trip can be made in high gear. A route has also been laid out from Mexico City to the Guatemalan border and much of it has already been completed. A survey has also been made to continue this route to Panama City. The Congress of the United States appropriated \$1,075,000 during 1936 for cooperation in this project.

Of the proposed Pan American Railway running from New York to Buenos Aires, some 7,126 miles of the total 10,116 have been completed. In the ten years since international commercial aviation began in the Americas, the 90-mile service from Key West to Havana has become a service operating over 22,870 miles. In addition there are domestic air services covering over 65,000 miles.

President Roosevelt's Visit and Address.—The delegation from the United States to the Buenos Aires Conference was a large and representative one, headed by Secretary of State Hull and including Assistant Secretary of State Sumner Wells and Alexander Weddell, Ambassador to Argentina. Immediately after his reelection President Franklin D. Roosevelt indicated his intention of being present at the opening of the Conference. On his trip to Buenos Aires the President stopped off at Rio de Janeiro, where he received a tremendous ovation. In an address to the Brazilian Congress and the Supreme Court, he emphasized the responsibility placed upon nations of the western hemisphere to seize the opportunity "to banish war from the new world and dedicate it to peace." President Roosevelt's reception in Buenos Aires surpassed anything previously witnessed. His address to the Conference upon its opening Dec. 1 was broadcast to the world. Leaving to the Conference all definite plans President Roosevelt confined

himself to emphasizing the necessity of striving to prevent war in the Western Hemisphere by every honorable means and to prevent the creating of conditions giving rise to war. Although he did not mention the Monroe Doctrine he indicated his willingness to change it to a multi-lateral policy, so that in case of external aggression the republics might consult together for mutual safety. He concluded his address in emphasizing the importance of satisfactory commercial relations as a fundamental bulwark of permanent peace. On his trip home, President Roosevelt stopped long enough to deliver an address in Montevideo which was received enthusiastically.

Achievements of the Conference.—The Argentinian Foreign Minister, Savaadra Lamas, was chosen unanimously as chairman of the Conference. Secretary Hull in a powerful address laid down eight pillars of enduring peace. Education for peace, frequent international conferences, ratification of peace agreements, adoption of a common policy of neutrality, establishment of liberal commercial policies, practical international cooperation, the strengthening of international law and faithful observance of treaty engagements. Following this the American delegation submitted its composite neutrality proposal coordinating existing peace treaties and setting up a permanent inter-American consultative committee composed of the Ministers of Foreign Relations of the contracting parties with the right to receive reports or requests from the signatory powers or to act on its own volition. If all peaceful efforts should fail each nation might impose such commercial restrictions as it saw fit but equally upon all belligerents. The neutral states further agreed to prohibit exportation of implements of war and loans to the belligerents.

To carry out these bases of peace three concrete proposals were introduced and unanimously agreed upon. The first of these proposals was a convention for the maintenance of peace. According to the terms of this agree-

ment it was provided that, should the peace of the American republics be threatened by any source either at home or abroad, the signatory powers should consult with each other immediately with a view to cooperative action to preserve the peace of the American continent. According to Secretary Hull "this proposal represents the strongest assurance of peace which this continent has ever had." It should be noted, however, that a very important part of the United States proposal, namely a permanent body consisting of the Foreign Ministers of each state to carry out the provisions, does not appear in the convention as accepted.

The second convention coordinated existing treaties for the maintenance of peace. It repeated the obligations and pledges under the Kellogg-Briand Pact, the Inter-American Conciliation and Arbitration Treaties of 1929 and the Saavedra Lamas Anti-War Treaty. To carry out these principles the more effectively, provision was made for individual or joint offers of good offices or mediation and a reminder to the parties to a controversy of their obligations under existing treaties.

If war is threatened the parties concerned agreed to a delay of six months for consultation before beginning hostilities. In case war should break out the signatory powers agreed to adopt a common and solidary attitude of neutrality, and in order to prevent the spread of hostilities they might impose restrictions upon the sale or shipment of munitions and upon any sort of financial assistance to the belligerents. Such control was to be exercised by domestic legislation, and no state member of the League of Nations would be expected to violate its obligations under the Covenant of the League.

The third proposal was a protocol of non-intervention. According to its terms, the internal affairs of any of the parties was inadmissible of intervention by any one of them and violations should give rise to mutual consultation. The protocol reaffirmed the non-intervention doctrine adopted in Montevideo in 1933.

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A resolution was passed for the codification of international law and agreement was reached to consider the question of the establishment of an Inter American Court of Justice at the next Pan American Conference to be held in Lima, Peru in 1938.

Two draft resolutions introduced by the American delegation provided for equality of treatment in international trade, the reduction of unreasonable and excessive trade barriers of all kinds and the maintenance of the unconditional most-favored-nation principle. These were accepted with very slight modifications.

RECIPROCAL TRADE AGREEMENTS

Secretary of State Cordell Hull continued to press forward with his policy of reciprocal trade agreements, particularly with the Latin American states. On Feb. 28, 1936 he announced that he was carrying on negotiations with nine Latin American republics and that agreements had already been successfully concluded with Cuba, Haiti, Brazil, Colombia and Honduras. The agreement with Honduras signed Dec. 18, 1935 was proclaimed Feb. 1, 1936. The agreement with Colombia signed Sept. 13, 1935 went into effect May 20, 1936. Before the end of the year two more trade agreements with Latin American states went into effect, the one with Nicaragua signed March 11 was proclaimed Sept. 1 and the one with Ecuador in the form of a *modus vivendi* signed June 12 went into operation immediately. A trade agreement with Guatemala was signed April 24 and one with Costa Rica Nov. 28. Thus of the 15 reciprocal trade agreements signed up to date, eight are with Latin American Republics.

TREATY RELATIONS WITH MEXICO

An important convention was signed with Mexico on Oct. 6 for the recovery and return of stolen or embezzled motor vehicles, trailers, airplanes or component parts. Persons in either country were authorized to present their claims through the Embassy of the United States in Mexico

City and through the Mexican Embassy in Washington. The governments agreed to make every effort to have the property detained and delivered to persons in the other country. The convention was to continue in effect for one year from the date of ratification and thence indefinitely unless notice were given by either government.

A migratory bird and game convention between Mexico and the United States was signed Feb. 7 and at the same time ratifications were exchanged of the salvage treaty signed June 13, 1935. This latter convention was designed to facilitate assistance and salvage of vessels in danger or shipwrecked on coasts or within the territorial waters of either country. On Jan. 2, 1936 Mexico paid \$500,000 as the second regular annuity under the Claims Convention of April 24, 1934 and also \$12,370.05 on account of deferred payments.

TREATY SETTLEMENT WITH PANAMA

Relations between the United States and Panama have been unsatisfactory for a considerable period of time due to the strong opposition on the part of Panama to the convention of Nov. 18, 1903 relating to the Canal Zone and kindred interests. After a long period of negotiation, a treaty was signed July 28, 1926, but this agreement was never ratified. Preliminary conversations were again begun which entered the stage of formal negotiations toward the end of 1934. These efforts were successfully culminated by four agreements signed by the two governments on March 2, 1936. The first was a general treaty revising the convention of Nov. 18, 1903 between the United States and Panama, two others related to radio communication in Panama and the Canal Zone, and the fourth was concerned with the construction of a trans-isthmian highway between the cities of Panama and Colon.

The general treaty made certain fundamental changes in the relations between the two governments. The United States accepted stricter limi-

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tations on the conduct of business and the right of residence in the Canal Zone. The annual rental of the Canal was henceforth to be 430,000 balboas, thus avoiding difficulties due to devaluation. In case of threat of aggression endangering Panama or the Canal the two governments were to consult for mutual defense. Due to the latter clause the treaty was considered in executive session by the Senate. It had not received the approval of either parliamentary body at the close of the year.

MILITARY AND NAVAL AGREEMENTS WITH BRAZIL

On May 27 the United States and Brazil signed an agreement providing for the continuance for four more years of the American naval mission which during the past four years has been assisting in the work of instruction at the Brazilian Naval College. The commission will be composed of eight officers and five chief petty officers and it will cooperate with the Minister of Marine and officers of the Brazilian Navy in an advisory capacity. A similar agreement was signed between the same two powers on Nov. 13 for the continuance for two years more of the United States military mission to Brazil consisting of four officers of the United States army who had been cooperating with the General Staff of the Brazilian army and who will further assist in courses given at the Brazil coast artillery instruction centers.

THE BOLIVIA-PARAGUAY DISPUTE

It will be remembered that a peace protocol had been signed by Bolivia and Paraguay on June 12, 1935 and that by the end of October, 1935, the demobilization of the two armies had been completed and both sides had carried out their undertaking of non-aggression. However the six mediating powers asked the mediators to

continue a study of the questions at issue and to try to find a pacific solution for all the differences. The result of their efforts was the adoption of a Declaration and Protocol by the Peace Conference on Jan. 21, 1936. The Declaration required the two parties to agree to maintain measures of security provided for in the Protocol of June 12, 1935 and to take the necessary steps to return prisoners and resume diplomatic relations. Under the agreement Bolivia was to pay Paraguay about \$600,000, this sum being based upon the number of prisoners and the expense involved in their repatriation. The protocol giving effect to this declaration was signed by the representatives of both states and approved by the Congresses of both on Feb. 8, 1936.

On Aug. 21, the Minister for Foreign Affairs of the Argentine Republic as President of the Buenos Aires Peace Conference declared that the repatriation of prisoners had been completed, therefore the sum to be paid Paraguay was due. With diplomatic relations resumed it was hoped that further questions would be solved by peaceful means.

However, difficulties arose from the need of policing the military lines in the Chaco to prevent contacts between the troops. Bolivia insisted upon the establishment of a neutral zone preliminary to delivering the check while the Paraguay government refused on the ground that such a move would alter the peace agreements already ratified. The Bolivian chief delegate to the Peace Conference was recalled on the ground that he had approved the indemnity without his government's consent. Only the pressure put upon the two powers by the neutrals and the possibility of bringing the matter up in the then forthcoming Buenos Aires Conference prevented a renewal of hostilities.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

UNITED STATES RELATIONS IN THE ORIENT AND NEAR EAST

BY ALBERT HOWE LYBYER

PROFESSOR, UNIVERSITY OF ILLINOIS

THE FAR EAST IN GENERAL

The attitude of the Government of the United States toward events in Eastern Asia in 1936 remained apparently identical with that of the previous five years: treaties ought to be observed, changes made by force contrary to treaties will not be recognized, active measures to compel observance of treaties where the interests of the United States are not largely and directly involved will not be taken, and customary protection of American interests as by gunboats and legation guards will be maintained unobtrusively. Such a *laissez faire* attitude toward a region where great activities are in progress tends more and more toward practical withdrawal from anything remotely resembling intervention.

Events and activities of large actual and larger potential importance took place during the year in the internal affairs of all three of the great states which occupy most of the Far East—Japan, China, and Russia—and in their relations with each other and with the rest of the world.

INSTITUTE OF PACIFIC RELATIONS

The Sixth Conference of the Institute of Pacific Relations was held in the Yosemite National Park, California, Aug. 15-29. Its program had been outlined at Banff in 1933, and 72 studies had been prepared beforehand, with the aim of assembling the background of undisputed facts, leaving the fields of opinion and interpretation, or more exactly, a selection from such fields, for the oral work of the Conference. The general subject was "Aims and Results of Social and Economic Policies in Pacific Countries." Five topics were suggested, each with two to six sections: the United States, Japan, the U.S.S.R., China, and "the changing balance of forces in the Pacific and the possibilities of peaceful adjust-

ment." The fifth topic as a whole and the sections on international implications of internal development in the four previous topics, were the basis for the agenda of the Conference. (Copies of the documents can be had from the office of the quarterly review *Pacific Affairs*, 129 East 52nd Street, New York City.)

For the Conference itself more than 200 delegates appeared from 11 countries. While many were very influential persons, and some had held high governmental positions, none was official in representation. On this account the discussions were free, in some cases trying tempers greatly. The Japanese in particular had much to endure, in consequence of the vulnerability of their country's attitude toward China and the unwelcome rapidity of its economic advance. A proposal to set up a regional league of nations, with military and economic sanctions, was held to be impossible of acceptance by the people of the United States and obnoxious to Japan, as being aimed for the present chiefly against the latter. While most predictions for the near future were gloomy, a promise of optimistic outcome lay in the general acceptance of Albert Sarraut's dictum on "the indivisibility of peace and the inseparability of East and West." The Philippine delegates unexpectedly showed willingness that the United States should retain indefinitely military posts and naval bases in their area. The Japanese representatives somewhat surprisingly advocated the permanent neutralization of the Philippines under the guaranty of Japan, the United States, and England. Obviously such an arrangement would prevent the United States from retaining naval bases there. Dr. Hu Shih of China inveighed against Japan's apparent determination "not to tolerate any government that may have a chance to unify and consolidate China." He

claimed that China is 90 per cent unified, and evidently looked forward to an ultimate ability of China to recover control of her five northern provinces, Manchuria, Mongolia, and the west, following the removal of Japanese authority, probably by force. Dr. Yoshizawa for Japan admitted that Japan had not always been in the right, but affirmed that China had also erred, and he hoped for a "more conciliatory attitude on both sides." But Japan's claim that while she could settle difficulties with Europe and America in a peaceful way, force was necessary in Asia, met with strong denial and virtual defiance from Russia and China. The representatives of Japan, Russia, England, and France agreed that "a method of achieving collective security and questions involving the changing of the balance of power in the Pacific were the most important problems to be met in the Far East."

JAPANESE PRESSURE ON CHINA

Japan, through the agency of the almost self-determining Kwantung Army, continued pressure toward the control of all China, managing Manchukuo closely, confirming dominance in Chahar and Hopel, and taking or countenancing steps in the other three northern provinces which she seeks to detach—Shantung, Suiyuan, and Shensi. Koki Hirota, who was foreign minister at the beginning of the year and prime minister from March 5, pressed for three chief points in the "readjustment of relations between Japan, Manchukuo, and China": these were stated on Jan. 21 to be replacement of anti-Japanese propaganda by active collaboration with Japan, the recognition of the independence of Manchukuo, and common action against Communism. In the active negotiations conducted at Nanking by Ambassador Kawagoe from October to December, the more specific demands were for an "autonomous" régime in the five northern provinces, the appointment of Japanese advisers in all government departments, and the brigading of equal numbers of Chinese and Japanese troops in the Chinese armies fighting

against Chinese communists. A stiffening of the Chinese attitude by stages throughout the year left acceptance of this program unattained.

INTERNAL JAPANESE CONDITIONS

Internal conditions in Japan were not unrelated to her foreign policy. The elections of Feb. 20 shifted the majority in Parliament from the militaristic tendencies of the Seiyukai party to the more liberal attitude of the Minseito. Six days later an attempt was made by a group of army officers to assassinate several of the more moderate statesmen; three were slain and two were wounded. The extensive readjustment which followed in the name of the Emperor Hirohito weakened decidedly the influence of the army and navy in public affairs. More conciliatory attitudes toward China, Russia, and other nations were assumed. On Nov. 25, however, the announcement of the completion of a treaty with Germany aimed at Communism disturbed international conditions; the Soviet Union declined to sign an agreement renewing for ten years the Japanese fishing rights in Russian waters, and apprehension was aroused generally, especially in England and France. Later the fishing rights were extended for one year, and Foreign Minister Hachiro Arita offered his resignation. Japanese criticism of the treaty with Germany was vigorous.

THE JAPANESE NAVY

The navy, deprived lately of such opportunities for distinction as the army has had in Manchukuo and North China, is reported to be pushing for advance in the island world. The German-Japanese treaty is believed to have secret clauses, by which Germany abandons permanently to Japan her former possessions in Oceanica, and agrees to a partition of the Dutch East Indies into two spheres of influence. The progress of the Philippine Islands toward total separation from the United States is watched closely by Japan; economic ties are being formed, and the doctrine is being propagated of "Asia for the Asiatics"

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

under the benevolent leadership of Japan. The appointment in August of Admiral Kobayashi as Governor General of Formosa was in line with the policy of southward expansion.

On Jan. 15 Japan withdrew formally from the five-power naval conference in London, because the representatives of England and the United States refused to allow Japanese naval equality in total tonnage. Toward the end of 1935 and later Japan declined to continue the Naval Limitation Agreements, which therefore expired at the end of 1936, and she prepared for rapid naval expansion.

JAPANESE ECONOMIC CONDITIONS

Economic conditions continued to be precarious. Some improvement in agricultural prices and international business was counter-balanced by obstruction to Japanese imports into some countries; in the spring President Roosevelt increased the tariff on Japanese cotton goods; he also criticized Japanese laxity in relation to the opium trade. A temporary increase of exports into North China followed the lowering of tariffs there by local authorities under Japanese influence; for a while outrageous smuggling was tolerated by Japanese and local Chinese authorities.

CHINESE CONDITIONS

In China during most of 1936 the country moved visibly toward political and economic unification, with a stiffening of resistance to the Japanese advance. General Chiang Kai-shek continued to train his army and to use portions of it against Chinese Communists, at the same time avoiding serious conflict with Japan. In the middle of the year the south rose, demanding that war be made at once upon Japan; the matter was settled with money, promotions, and a strengthening of the Kuomintang's attitude as regards Japan. A truly Chinese episode developed in December, when Marshal Chang Hsueh-liang seized the person of General Chiang Kai-shek, and held him prisoner two weeks. A settlement was reached with the help of the "Soong family." After the cap-

tive's release the captor pleaded guilty to treason, was condemned to ten years' imprisonment, and then was pardoned but held close; General Chiang resigned his offices, was reinstated, and retired for meditation. Apparently the Chinese attitude toward Japan was again to be stiffened. An indication that Chang had not taken sufficient care of his friends was shown in a flaring-up of Chinese Communist revolt in the northwest at the beginning of the new year.

RUSSIA IN THE FAR EAST

The government of the Soviet Union likewise took early in 1936 a stronger attitude as regards the Japanese advance. On March 31 it was announced that the U. S. S. R. would not tolerate interference in the affairs of Outer Mongolia. At the same time a Pact of Mutual Assistance between Russia and Outer Mongolia, of two years' standing, was made public. A month later, Japan agreed to a commission to settle frontier differences. The army and the air force in all Asiatic Russia was steadily strengthened, with the aim of enabling that area to take care of itself in case of a war of both Germany and Japan against Russia. The new railway north of Lake Baikal to the Pacific was reported to have been completed. Negotiations for a ten-year renewal of Japanese fishing rights in Asiatic Russian waters had almost been concluded, when announcement on Nov. 25 of the Japanese-German treaty led the Russians to refuse signature. The immediate question was compromised by a one-year extension of the fishing agreement, but Russia increased the tempo of her warlike preparations. Thus the situation in the Far East became more vitally related to that in Europe, illustrating the "indivisibility of peace."

In general, the advance of Japan alike as an internal policy, an active effort, and an international force suffered distinct diminution during the year; China more than ever before showed stability, progress toward national consciousness, and disposi-

tion to stand up to Japan; and Russia gave renewed evidence of firm determination to hold what she has in Eastern Asia, and to maintain predominance in the nominally Chinese territories of Outer Mongolia and Sinkiang.

POLITICAL LIBERATION IN THE NEAR EAST

For almost all parts of the Near East the year 1936 was a time of political liberation, in sharp contrast to the destruction of the independence of near-by Abyssinia. This contrast was by no means accidental, since in the background the English and French democracies and the liberalizing Russian socialist state stood against the aggressive forceful dictatorships of Italy and Germany. Accordingly Turkey was released from the demilitarization of the Straits, Egypt and Syria were allowed to substitute treaties for more subordinating relationships, the peoples of the Lebanon and Palestine received amelioration of conditions, and the various free states entered groupings which promised them greater security of peaceful progress. At Geneva in October, 1935, Turkey, Iran, and Iraq initialed a treaty of non-aggression to which Afghanistan adhered later, while Saudian Arabia and the Yemen considered joining. Stirrings were discerned of reviving Pan-Arabism, looking toward a federation of all territories south of the Taurus Range and between the Zagros Mountains and the Persian Gulf on the one side and the Mediterranean and Red Seas on the other, in close association with Egypt, for common defence and economic and cultural promotion. In February Iraq and Saudian Arabia signed a treaty of defensive alliance. In May Saudian Arabia and Egypt made a treaty of friendship, with regulation of the pilgrimage to Mecca and Medina. Many pilgrims were transported in motor cars from Iraq by Riyadh to Mecca in five days. An Egyptian company was formed for commercial air service between Egypt and Persia by way of North Palestine, Damascus, Aleppo, and Baghdad.

TURKEY

On April 10 Turkey brought before the League of Nations a firm request for release from those portions of the Treaty of Lausanne of 1923 which demilitarized the Straits and left them open to foreign war fleets. After much talk the substance of the request was granted in the Convention of Montreux on July 20; merchant ships may pass the Straits by day and night, in peace and during a war when Turkey is neutral, with full freedom except for sanitary inspection and fees for necessary services; if Turkey is at war, neutral ships may pass similarly by day; naval vessels in time of peace may pass under restrictions of size and total tonnage; in time of war, Turkey being neutral, the Straits are closed to ships of belligerents unless to help states subject to aggression; but if Turkey is at war, she may close the Straits to all foreign fighting ships. The Turkish-Bulgarian frontier zone was also demilitarized.

The Turkish press began in the autumn to raise the question of the status of the territory which includes Alexandretta and Antioch, in view of the approaching "independence" of Syria, with the claim that a Turkish majority in the area calls for a special régime. A commission of the League of Nations was sent to the region in December. There was talk in Turkey of forcible occupation, in case the League should not make a satisfactory settlement.

EGYPT

A readjustment of relations with Great Britain, terminating the "temporary occupation" which had lasted 54 years, ran through most of 1936. Both sides were disposed to be conciliatory because of the Italian threat at the control of the Eastern Mediterranean, the Suez Canal, and Egypt. An announcement by Foreign Secretary Eden on Dec. 14, 1935 that his government was ready to resume negotiations for a treaty led to a new Egyptian cabinet on Jan. 30, 1936 under Aly Maher Pasha who appointed a delegation of 11 Egyptians to proceed to London. Elec-

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

tions in May went overwhelmingly for the Wafd Nationalists, and their chief Nahas Pasha became premier. Meanwhile King Fuad died, and his 16-year old son Faruk became king, to be under a regency for two years. A treaty was signed in August and ratified by the Parliaments of both countries in November. Egypt is "independent" but in alliance with Great Britain for at least 20 years. Admission to the League of Nations and abolition of the Capitulations is contemplated. British troops will guard the Suez Canal as an international interest. Egypt will build military roads, and maintain them and the railroads, and aid generally if war should come. The Sudan is to be administered as a condominium *for the benefit of its inhabitants*. A decision of the Court of Appeals in February awarded Egypt the right to pay its debts not in gold but in paper related in value to English currency.

SYRIA AND THE LEBANON

The relations of Syria to France were revised at the same time, for similar reasons, and in a more or less parallel way with those of Egypt to Britain. An attempt of the mandatory power in January to suppress forcibly the new Syrian Nationalist Party led to trouble, with sanguinary riots in Damascus, Aleppo, and elsewhere, which lasted through February. On the 22nd of that month, however, High Commissioner de Martel, doubtless on instructions from Paris, yielded, accepting a Nationalist cabinet under Ata el-Ayubi. Three days later a treaty was promised, similar to that between Britain and Iraq, with admission of Syria to the League of Nations. A delegation was appointed and reached Paris in March. Similar arrangements were made later with the Lebanon, with a view to the supersession of the Syrian Mandate by two treaties with "independent" states, both of which would enter the League of Nations. A treaty was signed at Paris on Sept. 9, "creating" the new Syrian state. After a "probationary" period of three years, and admission to the League of Nations, the treaty will

come into full effect. After that France will have troops in Syria, Syrian armament will be like the French, and French technicians will be employed. Minorities are carefully protected, and some regions will have a large degree of autonomy. The election of a Parliament of 86 deputies was held in November, quietly except for the abstention of Turks from voting in the sanjak of Alexandretta.

On Jan. 6 the Constitution of the Lebanon was amended by French decree, under which on Jan. 20 Emile Eddé was elected President. On Nov. 13 he signed with de Martel an accord similar to that of France and Syria, "creating" an independent state of the Lebanon, within the boundaries established by the French at the beginning of the mandatory régime.

PALESTINE

The plan for a legislative council which was submitted by High Commissioner Sir A. Y. Wauchope to representatives of Arabs and Jews on Dec. 18, 1935, met with acceptance from neither group, the Arabs desiring full control because of possessing three-fourths of the population, and the Jews because of the desire to set aside Palestine as their national home. The former indeed proposed a plan which would "create" an Arab State like Iraq, Egypt, Syria, and the Lebanon, "independent" but holding the hand of the former mandatory and expected to join its group in the League of Nations. The British Government continued a balancing policy, angering the Arabs by continuing the immigration permission which had admitted 61,500 Jews in 1935, a process which in some ten years might bring about a Jewish majority. In April, after bloody rioting, the Arabs declared a general strike, which continued for six months. A petty warfare developed, amounting almost to an Arab revolt against the English. Palestine was practically closed to foreign travel and the government refused information to the Mandates Commission of the League of Nations. The British were about to apply martial law, when on Oct.

FOREIGN SERVICE OF THE UNITED STATES

10 an appeal from the "four Arab kings," the rulers of Iraq, Saudian Arabia, Transjordan, and the Yemen, led the Arab leaders to terminate the strike. A Royal Commission headed by Earl Peel had been appointed in July to learn the causes of the troubles, to examine how the mandate could be applied, so as to fulfil obligations toward both Arabs and Jews, and to consider and recommend

terms of revision and exercise of the mandate. In November the British government reduced but continued the admission of Jewish immigrants, thus pleasing neither Jews nor Arabs. The Royal Commission opened its sessions at Jerusalem on Nov. 12. At first only the Jews appeared before it. Later the Arabs abandoned their boycott and met with the Commission.

FOREIGN SERVICE OF THE UNITED STATES

BY HERBERT C. HENGSTLER

CHIEF, FOREIGN SERVICE ADMINISTRATION, STATE DEPARTMENT

ADMINISTRATION

Regulations.—In connection with the Foreign Service Act of Feb. 23, 1931, the administrative regulations embodied in Executive Orders (Nos. 5642/4, June 8, 1931) are of special importance. These regulations give practical effect to some of the chief purposes of the act. They set up machinery whereby it is put into operation by providing for a Board of Foreign Service Personnel, a Board of Examiners, a Foreign Service Officers' Training School, and a Foreign Service Officers' Training School Board.

Board of Foreign Service Personnel.—The duties of this Board are to examine into the character, ability, efficiency, experience and general availability of all members of the Service with a view to promotions, transfers and separations; to consider controversies or delinquencies among Foreign Service personnel, and to recommend those officers, who have shown special capacity, for promotion to the grade of minister. The Board is composed of not more than three Assistant Secretaries of State, one of whom shall be the Assistant Secretary having supervision over the Division of Foreign Service Personnel, who shall be chairman. The Chief of the Division of Foreign Service Personnel and one other member of the division may attend the meetings of the Board, but are not entitled to vote in its proceedings.

Board of Examiners.—The duties of the Board are to formulate rules to determine the scope and method, and hold examination of applicants for commission to the Foreign Service, and to determine those who are fitted for appointment. The examinations, which shall be both written and oral, are open only to Americans of good standing between the ages of 21 and 35 specially designated by the President for examination, who have been citizens of the United States for at least 15 years. American clerks and employees in the Foreign Service are granted certain exceptions concerning age and may be exempted by the Board from the written examinations. The Board is composed of not more than three Assistant Secretaries of State designated by the Secretary of State, the Chief of the Division of Foreign Service Personnel, and the Chief Examiner of the Civil Service Commission.

OFFICERS TRAINING SCHOOL

Purposes.—The purpose of this school is to provide a term of instruction in the Department of State as a period of probation for those successfully passing the examinations given by the Board of Examiners, and to judge, during this period, the new appointees to the Service as to their qualifications for advancement and assignment to duty as a Foreign Service officer. The governance of the school is set forth in rules and

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regulations prescribed by the Secretary of State. The school is under the direction of the Foreign Service School Board.

Foreign Service School Board.

—The duties of the Board are to act in all matters concerning the functions of the school with the approval of the Secretary of State; to select the director of the School from among the officers of the Foreign Service with the approval of the Secretary of State, and in its discretion to select other instructors from among the qualified officers of the Department of State, the Foreign Service, the executive departments of the Government, and other available sources. The Board is composed of the Assistant Secretaries of State composing the Board of Foreign Service Personnel, one Foreign Service officer assigned for duty in the Division of Foreign Service Personnel, and the director of the School.

PERSONNEL

Changes.—During 1936 one examination was held on May 4, 5 and 6 for appointment to the American Foreign Service. At this examination 727 took the written tests, of whom 105 presented themselves for the oral examination, and 32 passed the examination and their names were placed on the eligible list for appointment. In addition to the above, six subordinates in the Foreign Service, pursuant to the authority of law, presented themselves for and passed the oral examination and were certified as eligible for appointment. Of the total number of applicants whose names were placed on the eligible list, 14 have thus far been appointed as American Foreign Service Officers to fill vacancies.

Promotions From the Ranks.

—Since 1925, when the policy was formulated of promoting outstanding officers of the Service to the grade of Minister and Ambassador instead of recruiting them solely from civil life, there have been marked advances. During 1936, nine Ambassadors

out of a total of 17, and 16 Ministers out of a total of 37 have been drawn from the ranks of the Foreign Service. In addition, the Minister Resident and Consul General at Addis Ababa, Ethiopia, the Diplomatic Agent and Consul General at Tangier, Morocco, and the Minister Resident and Consul General at Baghdad, Iraq, are Foreign Service Officers.

Losses to the Service.—During 1936, there were four deaths, eleven retirements and five resignations from the Foreign Service. At present the Service totals 691 career officers.

CLASSIFICATION, FOREIGN SERVICE, 1936

	Salary	Number as of December 31, 1936
Heads of Missions		
Ambassadors.....	\$17,500	17
Ministers.....	12,000	1
Ministers.....	10,000	36
Diplomatic Agent and Consul General (Tangier).....	FSO*	1
Minister Resident and Consul General (Baghdad).....	FSO*	1
Minister Resident and Consul General (Addis Ababa).....	FSO*	1
		57

* Foreign Service Officers.

Foreign Service Officers		
Class 1.....	\$9,000—\$10,000	34
Class 2.....	8,000—8,900	33
Class 3.....	7,000—7,900	34
Class 4.....	6,000—6,900	62
Class 5.....	5,000—5,900	63
Class 6.....	4,500—4,900	93
Class 7.....	4,000—4,400	82
Class 8.....	3,500—3,900	82
Unclassified (a).....	3,000	78
Unclassified (b).....	2,750	72
Unclassified (c).....	2,500	58
		691
Clerks—Senior		
Class 1.....	\$4,000	2
Class 2.....	3,750	2
Class 3.....	3,500	7
Class 4.....	3,250	16
Class 5.....	3,000	56
Clerks—Junior		
Class 1.....	2,750	61
Class 2.....	2,500	122
Class 3.....	all under 2,500	1,369
		1,635

NOTE—For growth and development of the Foreign Service of the United States see THE AMERICAN YEAR BOOK for 1934, p. 50.

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DIPLOMATIC PERSONNEL

AMBASSADORS

	Accredited by United States		Accredited to United States	
Argentina.....	Alexander W. Weddell	1933	Señor Don Felipe A. Espil	1931
Belgium.....	Dave Hennen Morris	1933	Count Robert van der Straten-Ponthoz	1935
Brazil.....	Hugh S. Gibson	1933	Mr. Oswaldo Aranha	1934
Chile.....	Hoffman Philip	1935	Señor Don Manuel Trucco	1933
China.....	Nelson T. Johnson	1935	Mr. Sao-Ke Alfred Sze	1935
Cuba.....	Jefferson Caffery	1934	Señor Dr. Guillermo Patterson y de Jáuregui	1935
France.....	William C. Bullitt	1936	Mr. André de Laboulaye	1933
Germany.....	William E. Dodd	1933	Herr Hans Luther	1933
Great Britain..	Robert Worth Bingham	1933	The Honorable Sir Ronald Lindsay	1930
Italy.....	William Phillips	1936	Signor Fulvio de Suvich	1936
Japan.....	Joseph C. Grew	1932	Mr. Hiroshi Saito	1934
Mexico.....	Josephus Daniels	1933	Señor Dr. Don Francisco Castillo Nájera	1935
Peru.....	Fred Morris Dearing	1930	Señor Don Manuel de Freyre y Santander	1930
Poland.....	John Cudahy	1933	Count Jerzy Potocki	1936
Spain.....	Claude Gernade Bowers	1933	Señor Dr. Don Fernando de los Ríos	1936
Turkey.....	John Van A. MacMurray	1936	Mr. Mehmet Münir Ertegün	1934
Union of Soviet Socialist Republics	Joseph E. Davies	1936	Mr. Alexander Antonovich Troyanovsky	1934

MINISTERS

	Accredited by United States		Accredited to United States	
Albania.....	Hugh Gladney Grant	1935	Mr. Faik Konitza	1926
Austria.....	George S. Messersmith	1934	Mr. Edgar L. G. Prochnik	1925
Bolivia.....	R. Henry Norweb	1936	Señor Dr. Don Luis Fernando Guachalla	1936
Bulgaria.....	Frederick A. Sterling	1933	Mr. Dimitri Naoumoff	1936
Canada.....	Norman Armour	1935	The Honorable Sir Herbert Marler	1936
Colombia.....	William Dawson	1935	Señor Don Miguel López Pumarejo	1935
Costa Rica....	Leo R. Sack	1933	Señor Don Ricardo Castro Beeche	1936
Czechoslovakia	J. Butler Wright	1934	Mr. Vladimir Hurban	1936
Danzig, Free City of	Waldemar J. Gallman (Consul in Charge)	1934		
Denmark.....	(Vacant) Footnote (1)		Mr. Otto Wadsted	1930
Dominican Republic	H. F. Arthur Schoenfeld	1931	Señor Don Andrés Pastoriza	1935
Ecuador.....	Antonio C. Gonzalez	1934	Señor Capitán Colón Eloy Alfaro	1933
Egypt.....	Bert Fish	1933	Mr. Mohamed Amine Youssef	1935
El Salvador....	Frank P. Corrigan	1934	Señor Dr. Don Hector David Castro	1934
Estonia.....	Arthur Bliss Lane	1936	Mr. Charles Kuusik, Acting Consul General of Estonia in New York City in charge of Legation	1932
Ethiopia.....	Cornelius Van H. Engert (Appointed Minister Resident and Consul General, 1936)	1935		
Finland.....	Edward Albright	1933	Mr. Eero Järnefelt	1935
Greece.....	Lincoln MacVeagh	1933	Mr. Demetrios Sielianos	1935
Guatemala....	Fay A. des Portes	1936	Señor Dr. Don Adrian Recinos	1928
Haiti.....	George A. Gordon	1935	Mr. Albert Blanchet	1933
Honduras.....	Leo J. Keena	1935	Señor Don Julio Lozano	1935
Hungary.....	John Flournoy Montgomery	1933	Mr. John Pelényi	1933
Iran.....	(Vacant) Footnote (2)			
Iraq.....	Paul Knabenshue (Minister Resident and Consul General)	1933		

(1) Denmark: Chargé d'Affaires *ad interim*: North Winship.

(2) Iran: Chargé d'Affaires *ad interim*: Gordon P. Meriam.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

MINISTERS (Continued)

Accredited by United States			Accredited to United States	
Irish Free State	Alvin Mansfield Owsley	1935	Mr. Michael MacWhite	1929
Latvia.....	Arthur Bliss Lane	1936	Dr. Alfred Bilmanis	1935
Liberia.....	Lester A. Walton	1935	_____	
Lithuania.....	Arthur Bliss Lane	1936	Mr. Povilas Zadeikis	1935
Luxembourg.....	Dave Hennen Morris	1933	_____	
Monaco.....	Paul C. Squire (Consul in charge)	1936	_____	
Morocco.....	Maxwell Blake (Diplomatic Agent and Consul General)	1925		
Netherlands...	Grenville T. Emmet	1934	Jonkheer H. M. van Haersma de With	1934
Nicaragua.....	Boaz W. Long	1936	Señor Dr. Don Henri De Bayle (Minister Resident)	1936
Norway.....	Anthony J. Drexel Biddle, Jr.	1935	Mr. Wilhelm Munthe de Morgensterne	1934
Palestine.....	George Wadsworth (Consul General in Charge)	1935		
Panama.....	George T. Summerlin	1935	Señor Dr. Don Augusto S. Boyd	1936
Paraguay.....	Findley B. Howard	1935	Señor Dr. Don Alfredo Busk Coda	1936
Portugal.....	Robert Granville Caldwell	1933	Dr. João Antonio de Bianchi	1933
Rumania.....	Leland Harrison	1935	Mr. Charles A. Davila	1929
San Marino....	Joseph E. Haven (Consul in Charge)	1925		
Siam.....	James Marion Baker	1933	Phya Abhibal Rajamaitri	1935
Sweden.....	Laurence A. Steinhardt	1933	Mr. W. Boström	1926
Switzerland....	Hugh R. Wilson	1927	Mr. Marc Peter	1920
Syria.....	J. Theodore Marriner (Consul General in Charge)	1935		
Union of South Africa	Ralph J. Totten	1930	Mr. Ralph William Close	1934
Uruguay.....	Julius G. Lay	1935	Mr. J. Richling	1934
Venezuela.....	Meredith Nicholson	1935	Señor Dr. Don Diógenes Escalante	1936
Yugoslavia....	Charles S. Wilson	1933	Mr. Constantin Fotitch	1935

THE LEAGUE OF NATIONS AND ASSOCIATED AGENCIES

By THE ASSOCIATES

THE GENEVA (SWITZERLAND) RESEARCH CENTRE

AMERICAN RELATIONS AND COOPERATION

The year 1936 offered a period of marked transition in which to study the relationships which have developed between the United States and the three principal international agencies resulting from the World War: the League of Nations, the International Labour Office and the Permanent Court of International Justice.

It was a critical year both for the world in general and for the United States in particular. Activity, nervousness and strain were rampant everywhere: in Africa and Asia, actual armed conflict; in Europe, preparation for it; in the Americas,

precautions against it. The Old World had seen in rapid succession Italy's startlingly quick military victory in Abyssinia, the consequent collapse of the first collective action of sanctions, Germany's sudden re-occupation of the Rhineland, the most cruel of civil wars in Spain, and an alarming Nazi-Fascist network stretching from Rome through Berlin to Tokio. The Far East presented no happier picture, as Japan and China continued in a constantly rasping tension which threatened to explode at any moment.

The result of all these currents around the world was to produce unquestionably the most alarming period since the Armistice, with the

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conflict growing not only wider between nations but also deeper within nations. In fact, the so-called "ideological war" made civil strife a real danger in many countries. There was, in short, complete international and increasing internal disequilibrium, recrudescence of force, weakening of efforts for peace, and rearmament on a scale unprecedented in history, the United States alone spending over \$1,000,000,000 on arms during the year.

The question of international organization was thus thrown against the most vivid and world-wide background in its history. The League of Nations itself was being submitted to close scrutiny for possible "reform" and particularly universalization; the 21 states in the Americas were giving anxious consideration to the question of "the Organization of Peace"; the authoritarian states contemptuous of the League were enunciating their own international philosophies. The organism which President Wilson had put somewhat as a foundling on the doorsteps of the Paris Peace Conference had more than ever become a vital world issue.

In this disturbing situation the United States followed a policy which Secretary of State Hull described as "earnest, persistent, careful and cautious." It combined a relatively stable and continuous spirit of international cooperation with an occasional wide initiative showing that the government was evolving out of the narrow isolationism of previous years. While not a member of the principal agency of organized international cooperation, the government nevertheless took a series of actions parallel to the League's or initiated measures of its own contributing to the same general results, notably for neutrality in the Abyssinian conflict, for negotiation of trade treaties, for agreement with Britain and France on monetary matters, and for convocation of the Inter-American Conference.

American policy towards the League as such was defined in the fullest and most complete statements yet vouchsafed on this controversial problem by both Under-Secretary of State Phillips at the beginning of the

year and by President Roosevelt on Aug. 14 at Chautauqua. Mr. Phillips said: "Our relations with the League of Nations have not changed. We have continued carefully to avoid any entanglement in political affairs which do not concern this government. We have viewed with sympathy the efforts of the League to prevent hostilities between Italy and Ethiopia and subsequently to restore peace between them. We believe that our government having exerted itself in every way practicable to preserve peace can contribute most effectively to the cause of peace by maintaining an independent policy of strict neutrality."

President Roosevelt emphasized the same general principles at Chautauqua: "We shun political commitments which might entangle us in foreign wars; we avoid connection with the political activities of the League of Nations; but I am glad to say that we have cooperated wholeheartedly in the social and humanitarian work at Geneva. Thus we are a part of the world effort to control traffic in narcotics, to improve international health, to help child welfare, to eliminate double taxation and to better working conditions and laboring hours throughout the world."

ABYSSINIA

The Italo-Ethiopian dispute, which burst like a bombshell on the world in 1935 and brought about the first application of sanctions by the League and of the Neutrality Act by the United States, ran a dramatic course through 1936. The year opened with a perfecting of existing sanctions and study of their extension to oil and other primary materials; witnessed disturbing reports of heavy war materials shipments from the United States and a re-enactment of the Neutrality Act; saw further confusing and delaying efforts at mediation; reached a peak in Italy's startlingly quick military victory; withered off in the repealing of sanctions and American neutrality; and finally settled down to an uncomfortable period of further military consolidation by Italy and formal non-recognition by the League Powers

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and the United States. This far-away conflict in the heart of Africa was destined to have profound repercussions on American legislation and even echoes in the Presidential campaign.

During January, after the upheaval caused by the Hoare-Laval proposals and the resignations of the two Ministers, the Coordination Committee met to tighten existing sanctions and to consider their extension to other primary products, particularly oil. The existing sanctions were shown to be seriously reducing Italian trade and gold reserves. The latest figures from the United States, however, indicated serious danger, both to these prohibitions and to the objects sought in American neutrality. Not only were large shipments of oil, not yet on the sanctions list, going to Italy, as shown by an increase from the 1934 monthly average of \$505,000 to \$1,253,000 in November and \$2,296,000 in December, but also other articles actually on the sanctions list, such as rubber and metals, were beginning to be exported *via* the United States. This situation was beginning to cause considerable concern, both in Geneva and in Washington, where the new Neutrality Act was under consideration.

To apply an oil embargo was both difficult and delicate. It was recognized to be the most effective single action which could be taken to stop Italy's progress in Abyssinia, but its success would be dependent on the policy of a large non-member state, which, though having taken action parallel to the League, where it could legally do so, had no legislation covering oil and might not be given any. The League Powers realised that with America's colossal oil reserves it would be useless for them to act without American support, but they recognised that it would be difficult for Washington to act in advance, while there was doubt whether they should take an initiative in the hope that Washington would take similar action.

A Committee of Oil Experts studied the question and made a detailed report analysing the oil situation in

all its aspects—imports, consumption, stocks, substitutes, and transport. The report concluded that the quantity of oil products available for export from the United States greatly exceeded Italy's probable demands; that these oil exports had shown a large increase; and that it was not certain that they would be subjected to any limitation. An oil embargo, it said, could be effective "if the United States were to limit its exports to Italy to the normal level of its exports prior to 1935."

The discussions in Geneva had a direct effect in Washington, where the Neutrality Act was shortly to expire. The delicacy of the situation made it impossible to reach quick agreement on any new law to replace the provisional law, since some wished to give the President permissive powers, and others wished to make them mandatory. Consequently the previous law was re-enacted, with slight amendments, for a temporary period.

Meanwhile, a new effort at mediation was attempted by the League Powers at the instance of France. During the ensuing delay the Italian armies moved forward, smashed all Abyssinian opposition, and on May 5 captured Addis Abbaba, the Emperor of Ethiopia having fled a few days previously. This unexpected change in the situation led to an Extraordinary Assembly in June, which decided to rescind sanctions against Italy as no longer capable of producing the result desired.

President Roosevelt, in line with the policy of independent action, rescinded on June 20 the Neutrality Proclamation and other statements affecting the Italo-Ethiopian dispute. The President explained that his previous action had been taken "when it was ascertained that a state of war existed between Italy and Ethiopia," that in doing so he was "passing upon a question of fact," and that now "the conditions which led to the issue of the Proclamations have ceased to exist." Thus the League's action and the United States' neutrality policy were brought to an end as regards Italy after roughly six months of operation.

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This failure of successfully restraining aggression did not end the problem for the League or for the United States. Was the result of Italian conquest to be recognised either *de facto* or *de jure*? What was to be the status of diplomatic envoys and consuls in the new territory? And on what terms were diplomatic envoys to be received and sent to Italy?

The Ethiopian question remained to hound the Assembly in September in the matter of seating an Ethiopian delegation, and an echo of it was found in the Presidential campaign in the United States. Governor Landon, in his Indianapolis speech on Oct. 24, charged President Roosevelt with overriding the Neutrality legislation and of attempting to put the United States in the forefront of the sanctionist Powers against Italy.

Thus the Ethiopian question, far from being a mere colonial police problem, had disrupted European relations and caused far-reaching reverberations of a diplomatic and legal character throughout the New World. As for the experience of sanctions, it was generally agreed that they were effective, but not successful. Had they been applied earlier, or more effectively, or with wider cooperation, the result might have been otherwise.

FAR EAST

Japan and Manchukuo.—The events in the Far East, which had led the United States and the League into close contact during the Manchurian crisis in 1931-32, smouldered disturbingly but without violent eruption during 1936. Profound changes were, however, going on beneath the surface which threatened to bring the affairs of the vast Pacific area once more before both Washington and Geneva. Japan continued somewhat hesitatingly but still inexorably her forward march on the Asiatic Continent; China seemed to be both resigned to and preparing herself for an inevitable clash; the Soviet Union and the United States pursued a cautious, watchful policy; while all Pacific Powers intensified

their armaments alarmingly. The policy of non-recognition first promulgated by Secretary of State Stimson and subsequently adopted by the League Assembly continued to operate throughout 1936, although Italy was negotiating with Japan for the reciprocal recognition of Manchukuo and Abyssinia.

China and the League.—The special Council Committee charged with the League's work on Technical Collaboration in Chinese Reconstruction met twice during the year, Prentiss Gilbert, the American Consul in Geneva, being present as observer. The Committee made a general review of existing activities in connection with health, communications and transit, flood control, economics, agriculture, education and other matters for which the Chinese Government expressed deep appreciation. The League's Central Office in Nanking was maintained and a technical planning office was authorised with three foreign and an adequate number of Chinese engineers for the study of questions relating to roads and hydraulic questions, health and public administration. The Committee also approved the sending abroad of certain Chinese experts for training in the same fields.

Philippines.—The creation of the Philippine Commonwealth, whose foreign relations continue to be administered by the United States for the ten-year period before independence, caused nevertheless some changes both in Washington and in Manila as regards communications with the League in matters affecting the islands. Philippine membership in the Epidemiological Bureau at Singapore continues and various statistical information has been submitted directly from Manila. The invitation to join a Conference of Police Officers in Java to deal with traffic in women was accepted by the United States, which sent an observer whose report will be transmitted to both the United States High Commissioner to the Islands and to the United States Government. In addition to the Police Conference, a further meeting on rural hygiene was

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called by the League in the Far East, to which the United States was also to be invited. The Japanese mandated islands, which are of special interest to the United States as well as the League, were reviewed by the Mandates Commission.

The Institute of Pacific Relations held its sixth conference at Yosemite, with two Americans, Arthur Sweetser and Lewis R. Lorwin, acting as observers respectively for the League Secretariat and the International Labour Office.

INTER-AMERICAN CONFERENCE AT BUENOS AIRES

The most far reaching event which has yet taken place in the triangular relationship between the United States, the Latin American countries and the League of Nations was undoubtedly the Inter-American Conference for the maintenance of peace, convened by President Roosevelt and held in Buenos Aires in December. During the months of preparation and the month of conference, basic questions of international organisation were studied with results likely to affect not only the policies of the individual governments, but also the future of such international agencies as the Pan-American Union and the League of Nations. The Conference far exceeded the limits of a regional gathering and was projected notably by President Roosevelt and Secretary Hull against a world background. It was conceived as a sounding board for peace and democracy, a contribution, if possible, to the outside world, but a protection, if necessary, against it.

In his personal letter to the chiefs of state, President Roosevelt defined the aims of the Conference in terms of the maintenance of peace and the ratification of existing peace instruments or the creation of new ones. Such action, he felt "would advance the cause of world peace in as much as the agreements which might be reached would supplement and reinforce the efforts of the League of Nations and of all other existing or future peace agencies in seeking to prevent war."

The problem concerning the Con-

ference in the political field was to create a working policy as between states, like the United States which is bound by a rigid neutrality policy applicable equally to the innocent and guilty, and other states members of the League bound to a policy of defining the aggressor and imposing certain restraints against him.

The broad views expressed by the President in his address personally delivered to the Conference, as well as the far reaching policy stated by Secretary Hull, made it possible to reach agreements all round which, if somewhat vague, left the door open to a wide field of cooperative effort. Certain Latin American States brought forward plans for a "League of American Nations," while others emphasised their connections with the Geneva League, to which they would continue to give their adherence. A proposal for the creation of a Permanent Consultative Committee of the Foreign Ministers of the contracting countries, which was brought forward by the United States, was reduced in the end to a somewhat vague general commitment for consultation, because most of the Latin American states, already bound by similar commitments to the League, were not ready to go that far in setting up an apparently duplicating machinery, even though the convention contained a provision stating that nothing therein should affect the rights and duties under the League Covenant of those countries which are Members of the League. In a "Special Handbook for the Use of Delegates," particular attention was paid to League work and experience. A special section was devoted to "Efforts of the League of Nations to organise Peace," while the section on "Armaments" was based entirely on League statistics; that on "Financial Cooperation" had two paragraphs on League reconstruction efforts; and the section devoted to "Intellectual Cooperation" gave two pages to League work, particularly with reference to moral disarmament. Much valuable work was done by the Conference in the fields of economics, communications, intellectual cooperation and other mat-

ters cognate to League work. Like such activity at Geneva, however, little public attention was paid to it, though in many ways it may become the most productive of the Conference's efforts. What particularly deserves note perhaps was how closely the efforts of this Conference in the regional sphere and of the League in the universal sphere coincide with and support each other.

Secretary Hull, in a final speech, pointed out that isolation was impossible not only for the United States, but also for all the American nations put together. "In a closely knit, interdependent world," he said, "we see the folly of trying to build a Chinese Wall around this hemisphere." The President of the Conference expressed the same thought, denying the possibility of converting the Americas into another Robinson Crusoe's island.

Finally should be noted the decision of the Conference in asking its President, M. Saavedra Lamas, to transmit copies of its resolutions to two agencies located outside the Americas, namely the Vatican and the League. "The League," he said, "like the present Conference has been set up for the welfare of humanity as a result of an American initiative." The Secretary-General, in expressing his appreciation, notified his intention of transmitting these resolutions to all League Members.

An instance of League cooperation in Latin-America may be noted when the Government of Venezuela in 1936 requested the Secretary-General of the League and the Director of the International Labour Office to nominate respectively an expert in financial administration and in social problems to aid that Government in a general program of reconstruction.

ECONOMICS AND FINANCE

The efforts of the League and of the United States to promote world economic and financial recovery followed similar and, at times, identical paths during 1936. Their objectives were the same and their actions often inter-related.

While the American Government

was pursuing and extending the policy of reciprocal trade treaties on the basis of the most-favoured-nation clause, the League's Economic Committees continued to press for the general acceptance of broad principles for liberating international commerce from the strangling web of constantly tightening restrictions. Though League members were much preoccupied with the Abyssinian and other political questions, the President of the special Assembly, called in June to rescind sanctions, sought to turn the pessimism of the moment into a constructive channel by urging "a comprehensive and strenuous effort to set in motion an economic revival" which he felt was close at hand if the nations would only strive for it.

In the autumn, the League's technical services published the annual *World Economic Survey* with its encouraging data, while the Secretary-General took the unusual action of issuing a special memorandum on the economic situation for the September Assembly which concluded that "there has been a persistent, indeed, an accelerating, if uneven, recovery since the summer of 1932."

In early September the League's Economic Committee met with Professor James Harvey Rogers of Yale University, M. Leo Pasvolsky, who had recently served with the State Department's Economic branch, assisting. Though their presence on the Committee was in an expert capacity, both members were fully cognizant of the economic policy of the American Government. The Committee's report, later whole-heartedly endorsed by the Financial Committee, was so much in line with American policy that Assistant-Secretary Welles, on Oct. 19, was able to say that "the Economic Committee of the League of Nations meeting at Geneva vigorously endorsed the policy of this Government" as regards the method of reducing trade barriers.

Later in September, while the Assembly was in session, came the news of the Anglo-Franco-American monetary agreement which had immediate repercussions in the Assembly's effort to consolidate these benefits on a

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larger plane and extend them to the economic sphere. Later, Secretary Hull at a press conference, expressed his interest and gratification at the steps taken by the League's Economic and Financial Committees towards the restoration of normal international economic relationships.

The question of raw materials, which is of wide general interest, was raised by the 1936 League Assembly, leading to a decision to study this question in cooperation with non-member-states including, of course, the United States.

The efforts to obviate double taxation were given strong assistance by Mitchell B. Carroll, former treasury expert and E. P. King also of the Treasury Department.

Another question which has caused considerable international friction, namely the terms of international loans issued by Governments, was studied by a special committee of legal and financial experts, including Reuben Clark, former under-Secretary of State and Chairman of the Council of Foreign Bond Holders in New York, who accepted an appointment on the League Committee but was unable to attend the preliminary meeting in April.

Similarly the League's Statistical Committee continued its work in 1936 with the assistance of Dana Durand of the Tariff Commission and Karl Schneider of the Treasury Department. American agencies, both governmental and private, provided much valuable statistical data and documentation for the League's periodical publications on these questions.

COMMUNICATIONS AND POWER

The United States also continued to show effective interest in various aspects of League work in the field of communications and transit. A draft treaty, aimed to get rid of the damage caused to bird and fish life and to coastal property from the pollution of waters through oil-burning and oil-carrying shipping was drafted by a Committee assisted by American experts. The American Govern-

ment agreed to participate in an international conference to complete this Convention.

As regards the Transit Committee's recommendations on road signalling, the State Department reported that "the standard American practice concerning mechanical light signals and the recommendations of the League Committee are in almost complete accord." The American Government also transmitted a detailed memorandum regarding measures to coordinate transport by rail, road and inland waterways. It also forwarded a statement in connection with a general enquiry with regard to public works.

Finally the League was invited by the International Executive Committee of the World Power Conference, at the request of the American National Committee, to send a representative to the third annual Conference at Washington.

DISARMAMENT

The critical international situation during 1936 caused almost complete cessation of the League's disarmament work. No Committee of the Disarmament Conference met, nor was a President elected to succeed the late Arthur Henderson. The only meeting of the year, where disarmament generally gave way to rearmament, was that of the London Naval Conference which has its own independent origin and which drew up a limited agreement between the British Empire, France and the United States.

Meanwhile the League's *Armaments Year Book* was published, and it was estimated by the Disarmament Section that during 1935 a total of 5.4 billion gold dollars was spent on armaments as against 4.9 billion in 1934, 4.2 in 1932 and 3.5 in 1925. The chapter of the *Year Book* on the United States covers 34 pages and was prepared on the basis of data supplied by the American Government showing an increase in national defense expenditure from \$570,000,000 in 1933-34 to \$986,000,000 in 1936-37.

The future of the Disarmament

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Conference was considered by the Third Committee of the Assembly in September, and on Oct. 10 France put the question formally to the Council, which authorised its President "after consultation with his colleagues, to settle, as soon as circumstances permit, and in any case before the end of the year, the date of the meeting of the Conference Bureau." The Assembly report indicated that the subjects on which agreement may be hoped for shortly were (1) publicity of national defence expenditure, (2) control of arms manufacture and trade, and (3) creation of a permanent Disarmament Commission. Although the United States as a non-member of the League, did not participate in these discussions, the proceedings were followed by officials of the Government with close attention.

HEALTH

American cooperation with the League's health work during 1936 continued as before. There was participation in the study tours in the United States and Russia, Rural Health Conferences in Latin America and the Far East, the Pan-African Conference in Johannesburg, in the Epidemiological Intelligence Bureau in Singapore, and in nutrition studies. The United States Surgeon-General sat on the Health Committee; Government bureaus transmitted valuable information and documentation; the Rockefeller Foundation continued the financial grant which largely made possible this first worldwide technical service; and American institutions and individuals collaborated widely.

A cooperative study was organised on the world nutrition problem based on a central committee in Geneva and including National Health Administrations in various countries. The study involved problems such as dietary standards, vitamin requirements, protective foods, statistics of food production, consumption and prices, and general relationship to agriculture.

American science was represented at the first meeting of the Mixed Committee in February by Professor

E. V. McCollum of Johns Hopkins, with Professor Warren C. Waite of Minnesota as expert; and at the second session in June by Professor McCollum who, with three other experts, Harold B. Rowe of the Brookings Institute of Washington, Mr. Stevens, head of the Bureau of Agricultural and Economic Information of the Department of Agriculture, and Miss Faith Williams, Chief of the Cost of Living Division of the Department of Labor, also attended the second session of the Technical Committee, held concurrently. In addition, the Government transmitted a series of documents on the subject, including a Provisional Report on the consumption of foodstuffs by urban and village families in the United States by Hazel K. Stiebeling of the Bureau of Home Economics of the Department of Agriculture; educational measures taken by the Children's Bureau of the Department of Labor in regard to adequate standards of nutrition for pregnant women and for children; memorandum on efforts of the Emergency Federal Relief Administration for the Improvement of Nutrition; report by the Public Health Service and of the American National Red Cross in the nutrition field; and memorandum on Army and Navy dietary standards.

The plan to study urban and rural housing, including town planning and countryside improvements, was set under way in nine principal countries; that in the United States is to be under the direction of Professor C. E. A. Winslow of Yale, with the approval of the Surgeon-General and under the auspices of the American Public Health Association.

A Far Eastern Rural Hygiene Conference was authorized by a commission which visited 11 Far Eastern administrations including the Philippines.

During the year a League Study Tour in the United States was undertaken, when the American Government showed a group of public health officials recent achievements in public health and social welfare. Two American professors—Dr. McCollum and Dr. Winslow—took part in a similar tour in Soviet Russia.

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DANGEROUS DRUGS

During 1936 the United States participated in the League's efforts to control and regulate the use of narcotic drugs. An official delegation composed of Stuart J. Fuller of the State Department, Harry J. Anslinger, Narcotics Commissioner, Treasury Department, and Frank Ward of the State Department, legal expert, took part in the meeting of the Opium Advisory Committee in June and also in a special Diplomatic Conference which met to prepare a draft convention on the Suppression of the Illicit Traffic in Drugs.

The United States Minister in Berne, Hugh R. Wilson, sat with the Council on Sept. 19 when that body considered the composition of the Permanent Opium Central Board. In a private and personal capacity Herbert L. May acted on both the Permanent Central Board and the Supervisory Body created under the 1931 Opium Convention.

In a statement made to the Council in September regarding the reasons for the United States's refusal to sign the draft convention on the suppression of the illicit traffic in drugs, the United States Government, on hearings of the proceedings, considered that its point of view was not correctly set forth. Consequently, in November, the Acting Secretary of State submitted a memorandum to the Secretary-General of the League for circulation to all the governments which participated in the work of the Conference, correctly setting forth the American viewpoint.

SOCIAL AND HUMANITARIAN

American cooperation continued in 1936 on the League's Committees on the Protection of Young People and Child welfare. Representation was on the basis of full membership with the same rights and privileges as other Government representatives. Miss Katherine Lenroot, Chief of the Children's Bureau of the Department of Labor attended in April a special meeting, held in Paris, of the government members of the Committee, and also attended the regular annual session of the Committee in Geneva

during which a draft convention for the suppression of the exploitation of prostitution was completed for circulation to governments. The United States also announced the appointment of Miss Anne Guthrie as observer at the Far Eastern Conference of Central Authorities dealing with these questions.

At the meeting of the Child Welfare Committee, Dr. Edgar Dale of Ohio State University presented a valuable analysis of recreational films for children. The Government also transmitted a full report on recent developments in the United States and on the organization and accomplishments of juvenile courts. The question of assistance to indigent foreigners, rendered doubly urgent by the financial crisis, was considered and a draft convention drawn up by a Committee including Miss M. E. Hurlbutt of the New York School of Social Work, George L. Warren, director of the International Migration Service, and Henry B. Hazard of the Department of Labor. Mr. Hazard explained the difficulties confronting the government in connection with such a convention and proposed an enquiry into the methods in use in different countries.

A special non-Governmental Conference to establish a system of legal protection for refugees was held in Geneva in July. Fifty nations were represented, the United States sending an observer, Curtis T. Everett, American Consul in Geneva. During the year James G. McDonald, who had been appointed High Commissioner for Jewish and other refugees from Germany, resigned this office after presenting a full report to the Council, which thanked him for his devoted labors.

The question of settling 25,000 Assyrians now in Iraq in another place in the Near East was before the League. Dr. Bayard Dodge, president of the American University at Beirut, was appointed by the League Council as one of the members to serve on the Assyrian Settlement Trustee Board. The plans for settling the Assyrians in Syria later came to naught, the French Govern-

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ment having felt impelled to withdraw its offer of territory and support for the project.

INTELLECTUAL COOPERATION

American contacts, both official and unofficial, with the League's work in the field of intellectual cooperation continued during 1936. The Government's sympathetic attitude was shown in its reply to the Secretary-General's circular letter on the possible revision of school textbooks which said that the American Government "noted with satisfaction the increasing attention given in recent years by educational authorities in various countries to the problem of eliminating statements in text books which might lead to international misunderstanding or which might arouse unjust prejudice against other nations." It was pointed out, however, that the Federal Government of the United States had no jurisdiction in the selection of textbooks used in private or public schools.

An invitation to attend a Conference on Broadcasting and International Relations caused the American Government to say that while it "deeply sympathised with any movement having in view the advancement of the cause of peace, it does not. . . deem it practicable to participate in the contemplated meeting at Geneva." A member of the Federal Communications Commission, however, happened to be in Geneva at the time and attended the meetings of the Conference in an entirely unofficial capacity.

American unofficial cooperation continued with the Central Committee on Intellectual Cooperation, Professor James T. Shotwell being replaced this year by Malcolm W. Davis, European Director of the Carnegie Endowment. Professor Henry M. Miller of St. Louis University attended the Committee of Scientific Experts to outline and study a plan of international cooperation in scientific research.

Various Americans in a private capacity participated in a Permanent International Studies Conference which met to study the prob-

lem of "Methods of Peaceful Change."

WORLD COURT

No fundamental changes occurred during 1936 in America's relations with the World Court. The issue of the League as well as the Court was raised specifically in the Republican platform, which pledged that "America shall not become a member of the League of Nations nor of the World Court." Governor Landon, in his Indianapolis speech on Oct. 24, argued that circumstances had changed, that some of the Judges of the Court now represented dictatorships, that it was difficult to keep political influences out of the Court, and that while the United States had led in the settlement of disputes by arbitration, it "could not be involved in a political court."

The Democratic platform, on the other hand, left the door open, while President Roosevelt only a few months before had strongly urged American membership of the Court. His overwhelming victory may, perhaps, in part be regarded as an endorsement in this respect.

In a private capacity Dr. Manley O. Hudson was elected to membership of the Court by the League Council and Assembly, the latter on Oct. 8 giving him 48 out of 53 votes, the highest ever recorded in a Court election. Dr. Hudson had been nominated by the American National Group, the Panel of the Hague Arbitration Court, early in the year, to succeed the Hon. Frank B. Kellogg, who had resigned. Dr. Hudson was later nominated by 39 other national groups.

INTERNATIONAL LABOR ORGANIZATION

American Participation.—With full membership in the International Labor Organization, the United States was represented during 1936 in the annual conference, in all the meetings of the governing body, the American Regional Conference at Santiago, the special Maritime Session of the Conference, and the two Technical tripartite conferences

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called during the year. American delegations took leading rôles in these meetings and initiated policies, while President Roosevelt submitted to Congress the texts of various Conventions adopted, asking for favorable consideration. The convening of regional conferences on the one hand and of tripartite technical conferences on the other represented new trends in the procedure of the I.L.O.

Santiago Regional Conference.

—At the Regional Conference in Santiago, Chile, in January the principal questions dealt with were compulsory social insurance, labor of women and children, nutrition, unemployment, migration, labor of native races, the truck system, agricultural work, and the relations of the Labor Organization with American countries. Prior to the Conference, the United States had proposed the consideration of a reduction of hours in the textile industry and the raising to 16 of the minimum age of employment. The American delegation stressed its interest in the abolition of child labor, and presented a résumé of conditions in the textile industry in the United States, citing President Roosevelt's report to Congress in August, 1935. As a result, the Conference recommended the revision of the existing Convention.

The American delegation comprised Hoffman Philip, Ambassador to Chile, and Miss Frieda Miller of the New York State Department of Labor, as Government delegates, Joseph C. Molanphy as employers' representative, William Hutcheson, President of the International Brotherhood of Carpenters and Joiners of the American Federation of Labor, as workers' delegate, and John B. Faust, Consul at Santiago, who acted as secretary.

Geneva Maritime Conference.

A special technical Maritime Conference was held in Geneva in October. The American delegation was composed of Robert W. Bruere and Charles W. Sanders, representing the Government; Robert C. Lee, representing the American Shipowners; and Paul Schorrenberg, representing the American Seamen, as well as five Government advisors and two em-

ployers' and workers' advisors. No delegation took a more active part in the Conference. The Conference adopted six draft conventions and two recommendations, the most important convention providing for the three-watch system, the eight-hour day and the 56-hour week for both officers and men on all ships in international trade of over 2,000 tons. Other conventions related to vacations with pay, sickness insurance, liability of shipowners, minimum professional requirements of masters and ships' officers.

Annual Labor Conference.

—At the annual Labor Conference held in Geneva in June, the United States delegation consisted of two Government representatives, John G. Winant, Chairman of the Social Security Board and former Assistant Director of the Office, and Miss Frieda S. Miller, Director of the Division of Women in Industry and Minimum Wage, New York State Department of Labor; one representative of employers, Marion B. Folsom, treasurer of the Eastman Kodak Co.; and one representative of workers, Emil Rieve, president of the American Federation of Hosiery Workers. The four delegates were accompanied by 17 technical advisors. Mr. Winant was elected Government vice-chairman of the Conference, and Mr. Rieve and Mr. Folsom, vice-chairmen of the Workers' and Employers' Groups respectively.

The Conference considered several draft Conventions for final adoption, one for preliminary discussion, and 17 formal resolutions, three of which were introduced by the American delegation, one urging consideration of the protection of workers from employer interference, another dealing with the problem of silicosis, and the third with the effects of technological progress upon employment.

Chemical and Printing Industries.

—Preliminary technical tripartite meetings have taken place as regards the chemical and printing industries, at which the United States was represented by Carter Goodrich, United States Labor Commissioner for the Government; Woodruff Ran-

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dolph, Secretary-Treasurer of the International Typographical Union, for the workers; and Harold P. Winchester, Treasurer of the J. B. Lyon Company, printers and publishers, for the employers. A report was adopted concerning hours of work in the printing industry, to be submitted to the Annual Conference in 1937. At a preliminary Chemical Conference held in Geneva in December, the United States was represented by Theodore J. Kreps. The Conference adopted a report for submission to the Annual Conference.

Governing Body Meetings.—At the four sessions of the Governing Body, the United States was also fully represented: Isador Lubin, Commissioner of Labor Statistics of the Department of Labor, represented the Government at the February meeting, while at the April and June sessions, William G. Rice, Jr., then United States Labor Commissioner in Geneva, served as Government representative, and at the November meeting, Carter Goodrich, who had succeeded Mr. Rice. For the employers, Henry I. Harriman of the United States Chamber of Commerce attended both the February and November meetings, being replaced by Howe Volkmann at the April meeting, and by Marion Folsom at the June session. William Green, on behalf of American Labor, was represented by George Harrison of the Brotherhood of Railway Clerks in February, Robert Watt of the Massachusetts Federation of Labor in April, Emil Rieve, President of the Federation of Hosiery Workers, in June, and George Meany, President of the New York Federation of Labor, in November. The American representatives at the Governing Body, as in other fields, have taken a more active interest as they have become familiar with the functioning of the Organization.

At meetings of the Governing Body,

American delegates introduced resolutions pertaining to freedom of association and revision of minimum age conventions. Further, the United States was represented on 12 committees of the governing body, dealing with such matters as finance, wage statistics, cost of living, accident prevention, native labor, nutrition, etc.

American Missions.—The Social Security Board in Washington has kept in constant touch with the International Labor Office, which during the year supplied it with information and advice. Its special committee spent a week at the Office during August, discussing questions with the social insurance and other sections.

Another mission, headed by Jacob Baker, Assistant Administrator of the Works Progress Administration, was sent by President Roosevelt to Europe to study the cooperative movement in certain European countries and to report directly to the President. The mission spent a week at Geneva, and with the aid of the cooperative services of the International Labor Office, came into touch with the cooperative organizations of various countries.

Secretary of Labor's Visit.—Finally, Secretary of Labor Frances Perkins paid an official visit to the International Labor Office Aug. 9-11, when she discussed with the Acting Director and various Chiefs of Section problems at present under consideration by the Organization which are of special interest to the United States. Secretary Perkins expressed her appreciation of the work of the Office and its contribution to the solution of labor problems in the United States. She thought the great contribution of the Office was that it did not recommend action until there was a close scrutiny of the facts, so that the advice given was based on expert and exact knowledge of the situation.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

CHRONOLOGY OF INTERNATIONAL AFFAIRS

(From *The New York Times*, January 1, 1937)

FOREIGN RELATIONS

- Feb. 15**—Swiss-American trade treaty, signed Jan. 9, goes into effect.
- March 2**—New Panama Treaty drops guardianship guarantee to that Central American Republic and disclaims right to intervene outside Canal Zone.
- March 25**—Naval treaty is signed with Great Britain pledging naval parity, and, May 16, the United States repledges adherence to 1921 Nine-Power Treaty which guarantees Chinese territorial integrity.
- April 16**—Securities Exchange Commission asked by Germany to register loans made under Dawes and Young plans.
- May 6**—Reciprocal trade treaty is signed with France.
- May 16**—Reciprocal trade treaty is signed with Finland.
- June 4**—Because of Germany's discriminatory trade practices the anti-bounty clause of the Tariff Act of 1930 is invoked.
- June 8**—British notification of default on war debt now having a total of over \$85,000,000. On June 15, France, Estonia and Latvia register notifications of default.
- June 25**—Cruel treatment of two American citizens by Japanese soldiers at Peiping is protested.
- June 30**—Breckinridge Long is succeeded by William Phillips, Undersecretary of State, as Ambassador at Rome, and Fluvio Suvich, Undersecretary at Italian Foreign Office, is slated to succeed, at Washington, Ambassador Augusto Rosso, who is ordered to Moscow.
- July 11**—Countervailing duties ranging from 22½ to 56 per cent are ordered on certain German imports.
- July 11**—The reciprocal trade treaty with Russia is extended for another year.
- July 23**—American Embassy at Madrid asks aid for Americans at San Sebastian.
- Aug. 4**—Demand is made on Germany to reveal subsidies on exports to the United States. Germany lifts them on exports to U. S. on Aug. 13.
- Aug. 25**—William C. Bullitt, Ambassador at Moscow, succeeds Jesse Isidor Straus, at Paris.
- Sept. 2**—Great Britain notified that the United States will retain in service 40,000 tons of over-age destroyers beyond the total of the London 1930 Naval Treaty.
- Oct. 7**—Great Britain sends identical note to United States and Japan urging both to renew Article XIX of Washington Limitation Treaty restricting fortifications on the Pacific Ocean.
- Oct. 8**—Eugenio Cardinal Pacelli, the first Pontifical Secretary of State ever to visit the United States, arrives in New York with a mandate from Pope Pius XI (1) to forbid Catholic organizations or prelates, as such, from identifying themselves with politics; (2) to survey the condition of communism here. He reports to the Pope, Nov. 14.

NATIONAL ORIENTATIONS

- Jan. 15**—Japan withdraws from the London Naval Conference because her urge for equality is balked by the Anglo-American attitude, and Feb. 10, a Four-Power Cruiser Agreement is reached; March 25—Great Britain and the United States sign a new naval treaty; June 29—Japan declines to adhere to the Feb. 10 pact.
- March 7**—Germany marches troops into the Rhineland, still further demolishing the Treaty of Versailles, causing, March 12, a hurried assembly of the other Locarno signatories at London, with warnings to Berlin from the chancelleries of Paris and London, with France, Belgium and Russia insisting that sanctions be applied to Germany, and Great Britain and Italy declining to do so.
- March 23**—Italy with the adhesion of Austria and Hungary consolidates a common Danubian front which as-

CHRONOLOGY OF INTERNATIONAL AFFAIRS

- sure the independence of Austria menaced by Germany.
- March 25**—Moscow ruptures trade negotiations with Berlin on account of Hitler's denouncements of communism, and two days later both Moscow and Paris ratify a mutual defensive pact.
- March 31**—Germany proposes a four-months' truce and urges twenty-five years of the status quo—rejected by Great Britain and spurned by France, the next day.
- April 10**—Turkey asks the signatories of the Lausanne treaty to modify the Dardanelles, inhibitions [See League]. At Montreux the Powers (July 20) grant Turkey's request.
- April 23**—Great Britain sounds Germany in regard to a colonial formula, but the only reply comes from the press: a return of the mandated territories.
- April 27**—Tokyo and Moscow agree to allow Manchurian frontier differences to be settled by a triune commission.
- May 19**—Great Britain withdraws part of battleship squadron from the Mediterranean—there since Sept. 15, 1935—but (May 21) warns Italy not to intervene in Egypt and Palestine.
- July 9**—Britain still further reduces her Mediterranean naval force.
- May 24**—Soviet Russia demands naval parity with Germany in the Baltic and a modification of Japan's naval program off her Pacific littoral.
- June 11**—Dr. Hjalmar Schacht, German Finance Minister, starts on a tour of visits to Central and South-eastern chancelleries: 1—To survey the Fascist situation; 2—To open the way to a modification of Danubian inhibitions in the Treaty of Versailles; August 15—He visits Paris.
- June 11**—Following Mussolini's declaration of support for Chancellor Schuschnigg, May 16, and Hitler's guarantee for Austrian independence, July 8, Germany and Austria sign an agreement which settles outstanding differences with the former formally guaranteeing Austrian independence, thus opening the way for an Italo-German accord, negotiations for which are begun, July 13, and, on July 25, Germany becomes the first nation to recognize the Italian Imperial status of Ethiopia.
- June 22**—Canton and Nanking disagree in formulating a policy against Japan, and on July 8, the Kwangtung army of the former retired from the anti-Japanese front.
- Aug. 5**—Germany concludes a defensive and trade pact with Lithuania.
- Aug. 20-26**—Tactical and strategic formulas are discussed by German, Austrian, Hungarian, Polish and Albanian military experts at Italy's autumnal manoeuvres, under the direction of Field Marshal Badoglio.
- Aug. 27**—With British military dominance conserved, an Anglo-Egyptian treaty is signed granting political autonomy to Egypt, with special trade privileges for Britain.
- Sept. 8**—At Geneva the first World Youth Congress for universal war-prevention opens, with delegates from forty-eight nations.
- Sept. 13**—At the Little Entente Conference a deadlock is caused by pro-Russian Czechoslovakia and pro-German Yugoslavia and Rumania.
- Sept. 22**—Uruguay ruptures diplomatic relations with Spain, and in the Chancelleries of Rome, Berlin and Budapest ante-bellum Spanish envoys have usurped their former posts.
- Sept. 26**—Following France, but preceding Italy, Belgium, Holland and Switzerland go off the gold standard, while Poland remains on it, and, Oct. 12, the United States, Great Britain and France agree on purchases of gold to maintain stabilized exchange.
- Oct. 14**—Belgium rejects alliances, based on the Treaty of Versailles, and protection based on the Locarno treaty, and declares for neutrality—a démarche criticized in the chancelleries of the war Allies, but commended at Berlin; in France, Oct. 30, the Maginot line of defense is extended along the Belgian frontier to the sea, as had been advised by the Italian General Badoglio, when he surveyed the line on the eve of his departure for Ethiopia in 1935; in England, Nov. 10, Sir

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

Samuel Hoare, First Lord of the Admiralty and former Foreign Secretary, declares that his country is not obliged to send troops to the Continent in the event of war there; in Italy, Mussolini suggests agreements with Great Britain and France for a new military status for the Mediterranean.

Nov. 17—Germany, Italy and Japan announce a treaty aimed not at the U.S.S.R. but the International of the Communist party.

Nov. 18—Germany and Italy recognize the Nationalist Government in Spain under General Franco, and the next day Great Britain and France bar intervention.

Dec. 16-28—Great Britain and Italy are reported to be near an accord on Mediterranean issues.

Dec. 24—Germany is reported to have the choice of ending intervention in Spain or losing the diplomatic goodwill of Italy.

LEAGUE OF NATIONS

Jan. 20—The Council meets and Great Britain again declines to take the lead in the economic movement to coerce Italy, although two days later Anthony Eden, the British Foreign Secretary, is able to announce a five-power pact against Italy, if she attacks Great Britain—France, Spain, Yugoslavia, Greece and Turkey.

March 3—One week is given Italy and Ethiopia to formulate peace negotiations "within the framework of the League." Nothing happens and, on April 17, failure is admitted.

March 15—Germany offers to send delegates to the Council: If they be received as equals; if her potential pacts with her neighbors be debated; the next day the Council accepts the first condition.

March 19—That Germany has deliberately violated the Locarno treaty (March 7) is unanimously voted by the Council, and Germany states her reasons for so doing.

April 11—Turkey asks for modification of Lausanne treaty so as to permit her to fortify the Dardanelles and close them at will, and four days later she is backed up

by Moscow; the signatories of the treaty follow, Great Britain last of all, and at Montreux, July 20, the powers agree to grant Turkey's desire.

May 15—Guatemala resigns from the League.

June 17—Great Britain, while denying any change of policy, leads the movement to abandon the sanctions against Italy.

June 20—Argentina leads the movement not to recognize Italy's conquest of Ethiopia.

June 29—Delegates try to persuade Haile Selassie not to address the Assembly; the next day, when he does, there is a Fascist demonstration.

July 3—The Assembly declines to vote on the fate of Ethiopia.

July 15—Sanctions against Italy are definitely ended.

July 18—Nazis usurp power in the Free City of Danzig and defy the authority of the League by the abolition of civil rights; two days later Great Britain blocks the League's intervention as too hazardous.

Sept. 1—Plans for a reform of the League have been received from Great Britain, France, Russia, New Zealand, Latvia and Norway.

Sept. 14—"Economic pressure is a more formidable weapon for the preservation of peace in a crisis than are military *démarches*" is the postulate advanced by the Economic Committee.

Sept. 18—The exclusion of Ethiopian delegates is the condition of the return of Italian delegates, declined by the League, although, Sept. 22, Great Britain supports the condition; Sept. 23—The seating of Ethiopia is voted by the Assembly, 39-4.

Sept. 22—The Financial Committee urges a gold combination to devalue currencies and then promote a stabilization that shall bring trade prices into line with the pound and dollar. Belgium, France and finally Italy heed the advice.

Oct. 7—Germany, Italy and Portugal are accused by Moscow of aid

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- ing the reactionary Insurgents in Spain.
- Oct. 10**—With speeches made in the interests of abolishing tariff barriers and of the promotion of international trade, the Seventeenth Assembly ends. The Armaments Year Book (Oct. 23) shows that national armaments are increasing at the rate of nearly \$2,000,000,000 a year.
- Nov. 22**—The Regency Council of Egypt sounds the Secretary General with the admission of Egypt in view.
- Nov. 27**—The Spanish Government invokes action against the armed intervention of Germany and Italy.
- Dec. 9**—Turkey appeals under Covenant Article XI in her dispute with France over Alexandretta and Antioch.
- ### GREAT BRITAIN
- Jan. 20**—George V dies and is succeeded as Emperor and King by Edward Albert, Prince of Wales, Edward VIII.
- Jan. 23**—Rudyard Kipling is buried in Westminster Abbey.
- Feb. 17**—A new Anglo-Irish trade treaty is published; duties still high, showing defeat of Irish Free State in economic conflict with Britain.
- March 3**—A White Paper reveals the new armament program, the most costly since the World War: \$90,000,000 is asked for, with projects of \$2,000,000,000 visioned for the next few years. Nevertheless, the fourth successive annual budget surplus is announced on March 31—£15,407,926.
- March 24**—House of Commons opposes selling of Arab lands in the Palestine mandate as unfair to Jews.
- April 30**—Biggest naval program since the Washington conference of 1921-22 is announced—thirty-eight new ships.
- May 22**—J. H. Thomas resigns as Colonial Secretary and is succeeded (May 28) by William Ormsby-Gore, First Commissioner of Works, whose portfolio is taken by Earl Stanhope. On June 2 Thomas is found guilty of inadvertently betraying budget secrets which caused insurance losses of \$500,000.
- July 11**—Sir Samuel Hoare, who was replaced by Anthony Eden as Foreign Secretary, Dec. 18, 1935, now as First Lord of the Admiralty, announces a huge naval building program, envisaging \$400,000,000.
- Aug. 5**—Sir Christopher Bullock, Permanent Secretary to Air Ministry, resigns, charging corruption between Ministry and contractors.
- Sept. 5**—Autumn military manoeuvres are cancelled—troops are needed in Palestine.
- Sept. 14**—George Andrew McMahon, who threw an unloaded revolver in front of King Edward VIII on July 16, is sentenced to one year hard labor—his defense that he had been bribed by a foreign power is ignored.
- Sept. 21**—The trial of the editor of The Facist, charged with libeling Jews, begun Aug. 26, ends with a sentence of six months. On Oct. 4 Sir Oswald Mosley's Fascists abandon an attempt to parade through Whitechapel, London, on account of opposing demonstrations. Anti-Fascist bill is introduced, Nov. 10, prohibiting "political uniforms."
- Oct. 6**—After threats of rupture over government's armament policy, the Labor party favors such a policy in the event of threats from Germany and Italy.
- Oct. 11**—The supervision of arms contracts by the government, but not the nationalization of arms manufacturing in peace time, is recommended by the Royal Commission on Private Manufacture of Arms. [See Jan. 7, National Legislation.]
- Oct. 21**—The Air Ministry contracts for 200 war planes from United States factories and 300 from the Boeing firm in Canada.
- Oct. 28**—The Labor party and trade unions unite in demanding that the right to purchase foreign arms by Madrid government be unhampered.
- Oct. 29**—Major Walter Elliott is succeeded by William S. Morrison as Secretary for Agriculture.
- Nov. 17**—Foreign Secretary Eden

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

warns Hitler that Britain will fight to protect Belgium.
Nov. 19—The right to blockade the Spanish coast by General Franco is recognized.

Dec. 1—The House of Lords rejects the medical Voluntary Death Bill.

Dec. 10—The reign of King Edward VIII ends by abdication—the shortest in 453 years—and the next day his brother, the Duke of York, is proclaimed Emperor and King as George VI, and his little daughter, Princess Elizabeth, becomes heir presumptive.

Dec. 14—King George VI delivers his first message to Parliament.

Dec. 15—Exports are up \$45,000,000.

Dec. 22—The Archbishop of York scores the former King for the company he kept.

THE PALESTINE MANDATE

April 12-May 7—Arabs vote general strike with direct action and invoke passive resistance movement for civil servants—with rioting spreading from Jerusalem to the coast; garrisons are reinforced from England, May 11.

May 17—Rioting is put down in Jerusalem by armed enforcement of curfew law, and the next day a Royal Commission is dispatched from England to study the situation.

June 19—William Ormsby-Gore, Colonial Secretary, tells the British House of Commons that the government will restore order with fairness to Jews and Arabs, but the next day the Arab Supreme Committee charges that the British policy is responsible for the anti-Jewish riots. On June 26 the committee receives word that 100,000 desert Bedouins are ready to aid the Arabs.

Sept. 5—In spite of the offers of the Royal Commission for fair adjustments the Arab Supreme Committee continues the strike.

Oct. 1-Oct. 10—Martial law is decreed by Order in Council and then withheld by the High Commissioner on petition of Arab chiefs lodged with the Arab Supreme Committee, and, on Oct. 12, strike

is called off, as the Royal Commission opens a tribunal to hear grievances from Arabs and Jews. Deaths in the riots are estimated as being under 300, with Arabs claiming the larger proportion.

Dec. 8—Arab cheap labor is blamed by the British commissioners for the riots in Palestine.

INDIA

April 12—In debate in the National Congress on new Constitution (an act of Parliament since Aug. 2, 1935) Pandit Nehru, the president, advises socialism as a cure-all for political and social ills.

July-August—Riots break out between Hindus and Moslems in Bombay and other cities, while vain attempts are made by their leaders to adjust their differences in the framework of the Constitution; on Oct. 18, 35 having been killed and 315 injured in Bombay, the troops are called out and 50 more are killed and 490 wounded.

Dec. 27—In opening the National Congress at Faizpur, Pandit Jawaharlal Nehru urged India to hit "British imperialism" by the congressmen refusing to serve under the Government of India Act.

DOMINIONS

Jan. 13—In Canada, the Dominion Provincial tax program is presented: with the four western provinces burdened with debt, it concerns principally readjustments for agriculture and mining; Oct. 26—the Premier of Alberta appeals to Dominion Government for help to meet a \$1,250,000 bond issue.

May 28—In Ireland the Dail approves President De Valera's resolution to abolish the Senate.

Aug. 17—In Canada, Quebec French nationalists oust local Liberal rule of thirty-nine years.

Aug. 18—In West Australia, Philip Collier, the Laborite Premier, resigns.

Aug. 19—At Wexford, in Ireland, Separatist and Labor candidates are defeated by De Valera's, with General Owen O'Duffy, leader of the disbanded Blue Shirts, opening

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a crusade against the Madrid Government, and its Popular Front.

Oct. 21—In Canada the budget for National defense is increased by \$30,000,000—a total of \$50,000,000, with a large item for the air force; four days later a trade treaty with Germany is signed containing a barter schedule to overcome Germany's currency's embargo.

Nov. 3—Ireland's adhesion to the British Crown is ignored in the new Constitution of the Free State, which provides for the election of a president by popular vote, said president being responsible to the national legislature—still with two chambers.

Nov. 29—The Australian Commonwealth takes steps to establish legations at foreign chancelleries. The first is scheduled to be at Washington.

EGYPT

Jan. 20—To a demand for a new treaty giving complete independence to Egypt the British Government replies that the military status and the status of the Sudan must be settled by preliminary negotiations, and King Fuad attempts to secure a coalition Cabinet for this purpose, Nissim Pasha resigning at the King's request, Jan. 22; eight days later, with the Wafdist leaders standing aloof, Aly Maher Pasha heads a non-party Cabinet. The Wafdists rally and, May 10, form a new Cabinet with Nahas Pasha at the head, and preliminary negotiations for the treaty are begun.

April 28—King Fuad dies and is succeeded by his 16-year-old son as King Faruk.

July-Nov.—Negotiations for an Anglo-Egyptian treaty bear fruit in a document of mutual satisfaction. [See New National Orientations.]

RUSSIA

Apr. 6—The Soviet press, Government and Communist organs, demand equality for Germany at Geneva, in the interests of peace,

while the Soviet Government (Apr. 25) prohibits sale of manganese to that country.

Apr. 10—A protest is drafted against the Russo-Mongolian protective treaty by the Nanking Government.

Apr. 11—State aid is withdrawn from several industries.

June 1—The first draft of the new Constitution is published—the judicial system projected apparently protects individual rights as defined in bourgeois countries; a two-chamber legislature is also projected and all elections are to be by secret ballot; freedom of worship and equal rights for women are guaranteed.

June 27—The annual gold production of the USSR is reported to be \$600,000,000.

Aug. 18-23—Sixteen former Soviet officials, including Zinovieff and Kameneff, Yevdokimoff and Sonnenoff, are put on trial for an alleged conspiracy to assassinate Joseph Stalin, Secretary of the Executive Committee of the Communist Party. Trotsky, former War Commissar and secluded near Oslo, Norway (now on the way to Mexico), is accused as the head of the conspiracy. He vehemently declares that the trial is a frame-up. The principal defendants assume full responsibility, and Mikhail Tomskey, a Bolshevik leader, when accused, commits suicide. The sixteen defendants are executed (Aug. 24) and, although a milder form of "justice" is promised, when Nikolai Yezhov is appointed the head of OGPU, Sept. 27, nevertheless, Karl Radek is arrested as a conspirator, Oct. 7.

Nov. 20—The Moscow Government protests against the Japanese-German agreement. [See New National Orientations.]

Nov. 25—Stalin presents the new Constitution at the eighth Congress of Soviets convened at Moscow.

Dec. 5—The U.S.S.R. guarantees its pact with France by an amendment to the new Constitution.

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FRANCE

- Jan. 1**—The budget is approved by both Chamber and Senate and sent to President Lebrun for his signature. It contains no military items—these are covered by loans—but shows a surplus of about 12,000,000 francs, with expenditures at 40,437,-808,525 and revenue at 40,449,887,-066.
- Jan. 17**—The Stavisky case is finally liquidated—trial began Nov. 4, 1935.
- Jan. 22**—The Laval Ministry, which came in on June 7, 1935, resigns, and Albert Sarraut forms one (Jan. 24) and (Jan. 31) receives a vote of confidence, but there is a constant trend to the Left, whose parties stage a great demonstration against the reactionary groups on Feb. 16.
- March 13**—The Chambers adjourn for the general elections of April 16-21, which give the Left or Popular Front (Socialists, Radical-Socialists, Communists), 381; the Center, 115; the Right, 122. This results in a Socialist leader, Leon Blum, becoming Premier Designate, but with Communists refusing to enter his Cabinet.
- June 4**—Mr. Blum gets a Cabinet together, with the new portfolio of Sports and Recreation, the Sarraut government having resigned the day before, its action precipitated by a strike of 300,000 workers in the provinces, who take possession of the factories.
- June 6**—Mr. Blum gets a majority vote of confidence in the Chamber, having promised, the day before, a forty-hour week, vacations with pay and collective bargaining, which, June 9, take the form of project of law. The Forty-hour Bill is passed June 12, but "stay-in" strikes continue.
- June 15-Sept. 9**—Not only Paris, but the whole country is in a state of turmoil due to the augmenting Popular Front and the attempt of the government to outlaw reactionary organizations: June 19—The financial situation becomes desperate with money going out of circulation; June 23—The Red flag is raised on ships at Marseilles; June 23—The government assumes control of the Banque de France; July 10—Local gendarmes refuse to eject "stay-in" strikers, and the Communists defy the army to do so; Aug. 18—The new Governor of the Banque de France warns strikers that their vouchers may not be honored, and finally, Sept. 9, the backbone of the militant Popular Front is ruptured by the labor unions separating from the Communists.
- July 17**—The Chamber passes a bill nationalizing arms industry, and July 28, surveys the trade loss caused by absentee tourists.
- Sept. 8**—A project of the Left to stampede the government to intervene in Spain—on the side of the Madrid government—is blocked by the Right, and, Oct. 31, Maurice Thorez, Communist leader, threatens reprisals.
- Sept. 20**—"Stay-in" strikes are denounced by Radical-Socialist speakers, thereby weakening the Popular Front in the Chamber, to which they promise adhesion if the government will maintain order.
- Sept. 30**—Both Chambers are deadlocked over the Devaluation Bill, when the Senate forces a compromise on the Deputies and the bill becomes law, with the gold content of the franc reduced by about a third.
- Nov. 8**—Premier Blum receives a sustaining vote of confidence.
- Nov. 18**—Roger Salengro, Minister of the Interior, commits suicide. The Blum government blames the act on attacks in the reactionary press and a project of law is drafted (Dec. 1) to make the libel statute more drastic.
- Nov. 27**—French industrialists decline to accept Premier Blum's plan for arbitration in labor disputes.
- Dec. 2**—Extremely favorable comments in the Paris press on President Roosevelt's address at Buenos Aires. [See Latin America.]
- Dec. 18**—Premier Blum receives an adverse vote in the Senate, but the question of "confidence" is not

CHRONOLOGY OF INTERNATIONAL AFFAIRS

raised; hence there is no question of resignation.

GERMANY

Jan. 30—The third anniversary of the advent of Nazi dominance is celebrated throughout the country.

Feb. 4—Great concern is felt by the Nazi press with the news that a Nazi agent, Wilhelm Gustloff, has been assassinated by a 27-year-old Yugoslav Jew, David Frankfurter, at Davos, Switzerland. He is tried after eight months, and sentenced (Dec. 14) to eighteen years, minus the time spent awaiting trial. That the Swiss press compared Frankfurter to their own William Tell, did not improve Swiss-German relations.

Feb. 11—Mgr. Heinrich Wolker, secretary-general of the Catholic Youth, and some thirty of his co-workers are arrested charged with affiliating with Communists.

Feb. 18—Dr. Goebbels, Propaganda Minister, decrees the censorship of all religious publications.

March 3—Due to the meat shortage a fish diet is urged.

March 10—Chancellor Adolf Hitler declines to withdraw troops from the Rhineland on the ground that it is German territory. [See New National Orientations.]

March 29—A referendum on Hitler's foreign policy gives him 98.7 per cent of the 44,952,476 votes cast. (On election day the new Zeppelin Hindenburg is over the Atlantic on its way to Brazil and crew and German passengers have the privilege of voting. Dr. Eckener, the commander, is in disfavor for some time because he opposed using dirigibles for election propaganda purposes.)

April 8—The Pagan Faith Movement loses Professor Hauer—he resigns as head.

April 27—Colonel General Hermann Goering, Minister of State, is made arbiter for all financial disputes.

May 26-Aug. 24—Hundreds of monks are dragged before courts charged with immorality; the movement threatens to become more widespread when Hitler stops

it, after several convictions, with one Franciscan receiving eight years.

June 17—The identity of the head of the secret police is confirmed as Heinrich Himmler, when he is appointed the chief of police attached to the Ministry of the Interior.

Aug. 19—Mysterious death of Captain Fuerstner, the Jewish architect of Olympic village.

Sept. 6-9—At National Socialist Congress Hitler asserts that Germany has reassumed full sovereignty of arms—a position which entitles her to request and require colonies.

Sept. 21-22—The army manoeuvres are like those of the imperial régime—the attacking force defeats the defenders.

Sept. 30—Dr. Schacht, Finance Minister and president of the Reichsbank, having warned against further expansion of government credit (Sept. 23), declares that the mark will not be devalued.

Oct. 3—The Scharnhorst, first anti-Versailles battleship, is launched.

Oct. 19—Colonel General Goering is made supreme executive of the new Four-Year Plan.

Nov. 3—Program to train 10,000,000, between ages of 10 and 18 to form governing class.

Nov. 14—A note on inland waterways restoring the status quo ante bellum repudiates the last vestige of the Versailles treaty.

Nov. 23-24—The Nazi press is enraged over two events: The death penalty imposed on Emil I. Stickling, a German, for alleged sabotage in Russian mines, and the award of the Nobel Peace Prize for 1935 to Carl von Ossietzky, an anti-Nazi German—"challenge and insult" are seen in the award.

Nov. 27—Dr. Goebbels bans criticism of works of art.

Dec. 9—Dr. Schacht envisages a world calamity unless Germany be provided with colonies.

Dec. 14—Hitler from Berchtesgaden issues an order to Nazi leaders to cease attacks on Christianity, but makes no suggestion for legislation on the subject.

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ITALY

Feb. 12—The government announces an aviation budget for the fiscal year, 1936-37, calling for 990,400,000 lire—more than 100,000,000 in excess of the last.

March 3—The Banca Commerciale Italiana, Credito Italiano, Banca d'Italia, and Banca di Roma become State institutions by a decision of the Council of Ministers, and private banking is abolished.

March 23—What would be key industries in wartime are nationalized.

June 9—Colonel Ciano, Il Duce's son-in-law, is made Foreign Minister.

June 11—The first viceroy of Ethiopia, Marshal Pietro Badoglio, resigns to become the supreme organizer of the military establishment.

THE VATICAN

Dec. 19—Pope Pius XI having fallen ill, Cardinal Pacelli, Pontifical Secretary of State, takes over the administration of ecclesiastical affairs; His Holiness is 79.

Dec. 24—This year the address of loyalty to the Pontiff by the Dean of the Curia is omitted, but the Pope from his sickbed broadcasts a message to the world, calling for a campaign against communism and visioning, in the conflict in Spain, the fate of Europe.

SPAIN

Jan. 8—President Alcalá Zamora, being unable to find a Premier who could command a majority in the Cortes, finally succeeded with Manuel Portela y Valadares, who dissolved the Cortes in order to prevent an adverse vote and ordered elections for Feb. 8 and March 1, with the new Cortes assembling March 16.

Jan. 16—The dissolution was declared to be unconstitutional by the Popular Front, which issued a program for direct action.

Feb. 19—The Popular Front, having secured by the elections 253 Deputies out of 473, compared with 175 for the factions of the Right and 50 for the Center, succeeded in

having Manuel Azaña made Premier with the most radical Cabinet so far in the history of the republic.

March 16-April 8—While the Cabinet attempts to introduce agrarian reforms in the Cortes, the latter ousts President Alcalá Zamora, who had attempted to suppress the rioting inspired by the result of the elections; a general strike called by Popular Front organizations, April 17.

May 10—Mr. Azaña is elected President, and the government under Premier Santiago Casares Quiroga, begins a campaign against surviving institutions of Old Spain, directed in particular against the church and private property.

June 25—The Spanish Socialists demand a dictatorship, and on July 6, the newly appointed officials arrest hundreds of Nationalist leaders, charged with fascism.

July 17—On the eve of the revolt begun by Franco in Morocco the government prohibits all telephonic, telegraphic and radio communication.

July 19-Sept. 27—The siege of the cadets in the Alcazar at Toledo, which city remains in the hands of the Leftists until relieved by the Nationalists.

July 25-Aug. 9—In Madrid and Barcelona, Nationalist uprisings are put down; in Valladolid, Segovia and Palma the opposite takes place, with Algeciras bombed by government ships, on only a few of which has a Nationalist mutiny taken place.

Aug. 14—The Franco Nationalists demand a surrender of the government by the Popular Front, and with excesses on both sides and with towns taken and surrendered alternately, Franco's strategy for encircling Madrid from the north, west and south begins to take shape, with material and men aiding him from Germany and Italy and aid for the Popular Front from Russia and France—all "unofficially."

Oct. 1—The juntas of the military Nationalists elect Franco dictator

CHRONOLOGY OF INTERNATIONAL AFFAIRS

of Spain, while his forces, Oct. 10, invest San Martin de Valdeiglesias, fifteen miles from the capital, which is repeatedly bombed, as are its lines of communication with Barcelona, the government's chief port of supply from abroad.

Nov. 19-20—A non-party group of the British House of Commons visits Spain and reports a terrible condition in regard to sick and wounded and the excesses committed by both sides.

Dec. 1—Germans numbering 5,000 are reported to have landed at Cadiz to aid the Nationalists.

Dec. 16—Catalonia is bombed for the first time by the Nationalists.

Dec. 17-31—The army of the Popular Front is holding the Nationalists at bay around Madrid.

Dec. 28—The British Embassy corps at Madrid is ordered by London to Valencia, the war capital of the Popular Front's government.

ETHIOPIA

(See League of Nations.)

Jan. 22—The Italians capture Neghelli.

Feb. 16—Defeat of Ras Mulugeta at Enderta and Aradam.

Feb. 28—In Southern Tembien, Ras Seyoum and Ras Kassa are defeated and Amba Alaji is taken.

March 2—Tembien is recovered by a second defeat of Ras Kassa.

March 3—In South Scire, Ras Imru is defeated.

March 29—Sakota is captured and Harar bombed.

April 1—The army of the Negus at Quoram, near Lake Ashangi, is definitely defeated.

April 2—Gondar is occupied by the invaders and two days later Quoram.

April 12—The Italians reach Lake Tana and two days later reach Gallabat, near the Sudan, recovering more than de Bono had taken and then lost.

April 15—Graziani launches a second offensive in the south and April 29 occupies Sassa Banah.

April 23—After a bombing of the

capital with twenty-two planes on April 14 the Italians advance on it from north and south, but heavy rains impede Graziani.

April 30—The defense of Addis Ababa is abandoned and two days later the Negus, or Emperor Haile Selassie, flees, and on May 5 Badoglio enters the capital by forced marches—urged forward by messages from foreigners telling of rioting.

Dec. 17—News is received in Rome that Marshal Graziani, operating in Western Ethiopia, has caused the surrender of Ras Imru, which makes the conquest of Ethiopia complete.

THE FAR EAST

Feb. 20-March 5—Liberals gain in the elections. About 1,300 army men mutiny, killing four of Japan's highest officials. The Emperor ends the revolt and Koki Hirota becomes Premier. He declares Japan will never go to war while he holds the post.

July 30—Four battleships are requested in new Japanese naval program.

August—Kwangtung and Kwangsi Provinces in China rebel, demanding war against Japan. Nanking reaches terms with rebels through war threat and diplomacy.

October—Following scattered murders of seven Japanese in China, Japan demands autonomy for North China and cooperation with Nanking against communism.

November—Mongols and Manchukuoans invade Suiyuan Province, China, and as a result China breaks off negotiations with Japan.

Dec. 12—Generalissimo Chiang Kai-shek is kidnapped by Chang Hseuh-liang in a revolt in Shensi Province. Several Chinese officials are slain.

Dec. 26—The generalissimo is freed and his captor surrenders for trial.

Dec. 31—Chang Hsueh-liang is sentenced to ten years' imprisonment for his revolt.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

ACADEMY OF POLITICAL SCIENCE IN THE CITY OF NEW YORK, Fayer-Weather Hall, Columbia University, New York City.
AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa.
AMERICAN ARBITRATION ASSOCIATION, 521 Fifth Avenue, New York City.
AMERICAN PEACE SOCIETY, 734 Jackson Place, Washington, D. C.
AMERICAN POLITICAL SCIENCE ASSOCIATION, 205 Bennett Hall, University of Pennsylvania, Philadelphia, Pa.
AMERICAN SOCIETY OF INTERNATIONAL LAW, 700 Jackson Place, N. W., Washington, D. C.
CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, 700 Jackson Place N. W., Washington, D. C.
COUNCIL ON FOREIGN RELATIONS, INC., 45 East 65th Street, New York City.
FOREIGN POLICY ASSN., 8 West 40th Street, New York City.
INSTITUTE OF CURRENT WORLD AFFAIRS, 522 Fifth Ave., New York City.
INTERNATIONAL REFORM FEDERATION, 134 B St., N. E., Washington, D. C.
LEAGUE OF NATIONS ASSN., 6 East 39th Street, New York City.
LEAGUE OF NATIONS UNION, 8 West 40th Street, New York City.
NATIONAL COUNCIL FOR PREVENTION OF WAR, 532 17th Street N. W., Washington, D. C.

PEOPLE'S LOBBY, INC., 113 First St. N. E., Washington, D. C.
WOMEN'S INTERNATIONAL LEAGUE FOR PEACE AND FREEDOM, 150 Fifth Avenue, New York City.
WOMEN'S PEACE UNION, 2 Stone Street, New York City.
WORLD PEACE FOUNDATION, 40 Mount Vernon Street, Boston, Mass.

REGIONAL

AMERICAN ASIATIC ASSN., 1 Hanover Square, New York City.
AMERICAN COMMITTEE TO AID ARMENIA, 33 East 27th Street, New York City.
CHINA SOCIETY OF AMERICA, 570 Lexington Avenue, New York City.
COMMITTEE ON COOPERATION IN LATIN AMERICA, 254 Fourth Ave., New York City.
ENGLISH-SPEAKING UNION OF THE UNITED STATES, 19 West 44th St., New York City.
FAR EAST CONFERENCE, 21 West Street, New York City.
FRENCH INSTITUTE IN THE UNITED STATES, 22 East 60th Street, New York City.
FRIENDS OF IRISH FREEDOM, 132 East 16th Street, New York City.
JAPAN SOCIETY, INC., 527 Fifth Ave., New York City.
NETHERLAND-AMERICA FOUNDATION, 239 East 17th St., New York City.
PAN-AMERICAN SOCIETY, INC., 67 Broad Street, New York City.
PAN-PACIFIC UNION, 1067 Alaska Street, Honolulu, Hawaii.

PART TWO

AMERICAN GOVERNMENT

DIVISION III

THE NATIONAL GOVERNMENT

FEDERAL ADMINISTRATIVE ORGANIZATION

BY WILLIAM M. SCHUYLER

EDITOR, *The American Year Book*

THE PRESIDENT AND VICE-PRESIDENT

President.—Franklin Delano Roosevelt, of New York (Democrat). Sworn into office as President of the United States, March 4, 1933, in succession to Herbert Hoover, and inaugurated for second term Jan. 20, 1937.

Vice President.—John Nance Garner of Texas (Democrat), inaugurated Vice President of the United States, March 4, 1933, and inaugurated for second term Jan. 20, 1937.

Secretaries to the President.—Marvin Hunter McIntyre (Kentucky); Stephen Early (Virginia); Marguerite A. Le Hand.

Presidential Vacancy.—By Act of Congress, in the case of vacancy occurring in the office of President through the death or removal of both the President and Vice President, the Cabinet officers succeed to the Presidency in the order indicated in the arrangement of the following summary of the executive departments:

DEPARTMENT OF STATE

Secretary of State.—Cordell Hull.

Undersecretary of State.—Vacant.

Assistant Secretaries of State.—Wilbur J. Carr, R. Walton Moore, Francis B. Sayre, Sumner Welles.

Foreign Service Personnel

Board.—Wilbur J. Carr, Assistant Secretary of State, chairman; Sumner Welles, R. Walton Moore.

Legal Adviser.—Green H. Hackworth.

Economic Adviser.—Herbert Feis.

Chief Clerk and Administrative Assistant.—Clinton E. MacEachran.

Assistant to the Secretary of State.—Harry A. McBride.

Chiefs of Divisions.—

Far Eastern Affairs.—Stanley K. Hornbeck.

Latin-American Affairs.—Laurence Duggan.

Western European Affairs.—James Clement Dunn.

Near Eastern Affairs.—Wallace S. Murray.

Mexican Affairs.—Edward L. Reed.

Eastern European Affairs.—Robert F. Kelley.

Passport.—Ruth B. Shipley.

Current Information.—Michael J. McDermott.

Foreign Service Administration.—Herbert C. Hengstler.

Protocol and Conferences.—Richard Southgate.

Treaty.—Charles M. Barnes.

Foreign Service Personnel.—Thomas M. Wilson.

Research and Publication.—Cyril Wynne.

Trade Agreements.—Harry C. Hawkins.

III. THE NATIONAL GOVERNMENT

Visa.—John Farr Simmons.
Communications and Records.—
David A. Salmon.
Chiefs of Bureaus.—
Accounts.—William McNeir.
Translating.—Emerson B. Christie.
Chiefs of Offices.—
Arms and Munitions Control.—
Joseph C. Green.
Consular Commercial.—James J.
Murphy, Jr.
Historical Adviser.—Hunter Miller.
Coordination and Review.—Margaret M. Hanna.
Foreign Service Buildings.—Robert
J. Phillips (Assistant Chief Acting).
Foreign Service Officers' Training
School.—Lowell C. Pinkerton.

DEPARTMENT OF THE TREASURY

Secretary of the Treasury.—
Henry Morgenthau, Jr.

Charged with the management of the national finances; prepares plans for the improvement of the revenue and support of the public credit; superintends collection of the moneys paid from and into the Treasury; controls construction of public buildings, coinage and printing of money, and the administration of the Coast Guard and the Public Health Service; *ex-officio* chairman of the Federal Reserve Board and of the Federal Farm Loan Board.

Undersecretary of the Treasury.
—Vacant.

Assistant Secretary in Charge of Public Health.—Josephine Roche.

Assistant Secretary in Charge of Customs, Coast Guard and Narcotics.—Stephen B. Gibbons.

Fiscal Assistant Secretary.—
Wayne C. Taylor.

Assistants to the Secretary.—
John Kieley and Henriette S. Klotz.

Administrative Assistant to the Secretary.—William H. Reynolds.

Chief Clerk and Superintendent.
—F. A. Birgfeld.

Commissioner of the Public Debt Service.—William S. Broughton.

Commissioner of Accounts and Deposits.—E. F. Bartelt.

Chiefs of Divisions.—

Appointments.—James E. Harper.

Bookkeeping and Warrants.—Joseph Greenberg.

Deposits.—E. D. Batchelder.

Loans and Currency.—Marvin Wesley.

Paper Custody.—M. A. Emerson.
Accounts and Audit.—M. R. Loafman.

Research and Statistics.—George C. Haas.

Secret Service.—Vacant.

Procurement.—Rear Admiral Christian Joy Peoples, Director.

Chief Disbursing Officer.—Guy F. Allen.

Comptroller of the Currency.—
J. F. T. O'Connor.

Has supervision of the national banks, their examination and reports; preparation and issue of national bank circulation; redemption and destruction of national bank notes. *Ex-officio* member of the Federal Reserve Board in which capacity he draws a salary of \$7,000 in addition to the salary of \$5,000 attached to the office proper of Comptroller of the Currency.

Treasurer of the United States.
—William A. Julian.

Charged with the receipts and disbursement of all public moneys deposited in the Treasury and Sub-Treasuries and in national banks depositories.

Director of the Bureau of the Budget.—Daniel W. Bell (acting).

Commissioner of the Bureau of Customs.—James H. Moyle.

Commissioner of the Bureau of Internal Revenue.—Guy T. Helvering.

Charged with general supervision of the collection of all internal revenue taxes, including the income tax, and the enforcement of internal revenue laws.

Federal Alcohol Administration.
—W. S. Alexander, Administrator.

Director of the Bureau of the Mint.—Nellie Tayloe Ross.

Has general supervision of the mints and assay offices.

Commissioner of Narcotics.—
H. J. Anslinger.

Register of the Treasury.—W.
W. Durbin.

FEDERAL ADMINISTRATIVE ORGANIZATION

Director of the Bureau of Engraving and Printing.—Alvin W. Hall.

Produces all the securities and similar work of the Government printed from steel plates.

Bureau of the Public Health Service.—Thomas Parran, Jr., Surgeon General.

Charged with the framing and enforcement of regulations for the prevention of the introduction and spread of contagious disease; supervision of the quarantine service of the United States, and supervision of the marine hospitals.

National Institute of Health.—George W. McCoy, Medical Director.

Federal Board of Hospitalization.—Brigadier General Frank T. Hines, Chairman.

Coast Guard.—Rear Admiral Russell R. Waesche, Commandant.

Office of the Supervising Architect.—L. A. Simon, Supervising Architect.

Custom House.—Charles R. Lewis, Deputy Collector in Charge.

DEPARTMENT OF WAR

Secretary of War.—Harry Hines Woodring.

The Assistant Secretary of War.—Vacant.

Administrative Assistant and Chief Clerk.—John W. Martyn.

Executive Assistant to the Secretary of War.—Oliver J. Grimes.

Clerk to the Secretary of War.—John W. Schott.

War Department General Staff.—General Malin Craig, Chief of Staff; Major General Stanley D. Embick, Deputy Chief of Staff.

Office of the Chief of Cavalry.—Major General Leon B. Kromer, Chief.

Chief of Field Artillery.—Major General Upton Birnie, Jr.

Chief of Coast Artillery.—Major General Archibald H. Sunderland.

Chief of Infantry.—Major General Edward Croft.

Chief of Chaplains.—Alva J. Brasted.

The Adjutant General.—Major General Edgar T. Conley.

The Inspector General.—Major General Walter L. Reed.

The Judge Advocate General.—Major General Arthur W. Brown.

The Quartermaster General.—Major General Henry Gibbins.

Chief of Finance.—Major General Fred. W. Boschen.

Surgeon General.—Major General Charles R. Reynolds.

Chief of Engineers.—Major General E. M. Markham.

Chief of Ordnance.—Major General W. H. Tschappat.

Chief Signal Officer.—Major General James B. Allison.

Chief of the Air Corps.—Major General O. Westover.

Chief of the Bureau of Insular Affairs.—Brigadier General Creed F. Cox.

Philippine Islands.—United States High Commissioner, Vacant.

Puerto Rico Government.—Blanton Winship, Governor.

Chief of the National Guard Bureau.—Major General Albert H. Blanding.

Chief of the Chemical Warfare Service.—Major General Claude E. Brigham.

The Army War College.—Commandant, Brigadier General Walter S. Grant.

The Army Industrial College.—Col. Harry B. Jordan, Director.

DEPARTMENT OF JUSTICE

Attorney General.—Homer S. Cummings.

Represents the United States in all legal matters.

Solicitor General.—Stanley F. Reed.

Assistant to the Attorney General.—Joseph B. Keenan.

Assistant Attorneys General.—John Dickinson, Robert H. Jackson, Harry W. Blair, James W. Morris, Brian McMahon, Joseph R. Jackson (Division of Customs).

Director of the Bureau of Investigation.—J. Edgar Hoover.

Executive Assistant to the Attorney General.—Ugo J. A. Carusi.

Administrative Assistant.—Vacant.

General Agent.—Herbert J. McClure.

Chief Clerk.—Harvey C. Donaldson.

III. THE NATIONAL GOVERNMENT

Assistant Chief Clerk and Appointment Clerk.—Charles B. Sornborger.

Chief of the Division of Records.—Robert M. Moore.

Chief of the Division of Supplies and Printing.—John F. Holland.

Librarian.—George Kearney.

Director of the Bureau of Prisons.—James V. Bennett.

Pardon Attorney.—Daniel M. Lyons.

POST OFFICE DEPARTMENT

Postmaster General.—James A. Farley.

Executive Assistant to the Postmaster General.—Ambrose O'Connell.

Secretary to the Postmaster General.—William J. Bray.

First Assistant Postmaster General.—William W. Howes.

Second Assistant Postmaster General.—Harlee Branch.

Third Assistant Postmaster General.—Clinton B. Eilenberger.

Fourth Assistant Postmaster General.—Smith W. Purdum.

Comptroller and Budget Officer.—William L. Slattery.

Director of Parcel Post.—John A. Brennan.

Solicitor.—Karl A. Crowley.

Chief Post Office Inspector.—Kildroy P. Aldrich.

DEPARTMENT OF THE NAVY

Secretary of the Navy.—Claude A. Swanson.

The Assistant Secretary of the Navy.—Charles Edison.

Administrative Assistant and Chief Clerk.—William D. Bergman.

Chief of Appointment Division.—Charles Piozet.

Chief of Division of Records.—Charles T. Ogle.

Budget Officer.—Captain H. F. Kimmel.

Director of Shore Establishments.—Rear Admiral H. E. Lackey.

Island Governments.—

Guam.—Commander Benjamin V. McCandliss, Governor.

American Samoa.—Captain Macgillivray Milne, Governor.

Chief of Naval Operations.—Admiral William H. Standley.

Chief of the Bureau of Navigation.—Rear Admiral Adolphus Andrews.

Chief of the Bureau of Yards and Docks.—Rear Admiral Norman M. Smith.

Chief of the Bureau of Ordnance.—Rear Admiral H. R. Stark.

Chief of the Bureau of Construction and Repair.—Rear Admiral Emory S. Land.

Chief of the Bureau of Engineering.—Rear Admiral Harold G. Bowen, Engineer in Chief.

Chief of the Bureau of Supplies and Accounts.—Rear Admiral Charles Conard.

Chief of the Bureau of Medicine and Surgery.—Rear Admiral P. S. Rossiter.

Chief of the Bureau of Aeronautics.—Rear Admiral Arthur B. Cook.

Judge Advocate General.—Rear Admiral G. J. Rowcliff.

Naval Consulting Board.—Thomas Robins, Secretary.

Compensation Board.—Rear Admiral W. P. Robert, senior member.

General Board.—Rear Admirals Thomas C. Hart (Chairman), A. W. Johnson, W. R. Sexton, A. E. Watson, Commander R. O. Glover.

President of the Board of Medical Examiners.—Rear Admiral John B. Dennis.

President of the Naval Examining Board.—Rear Admiral Charles Russell Train.

President of the Naval Retiring Board.—Rear Admiral John B. Dennis.

Naval Dispensary.—Captain Benjamin H. Dorsey, Medical Corps.

Navy Yard and Station, Washington, D. C.—Rear Admiral George Pettengill, Commandant.

Naval Medical Center.—Rear Admiral Charles S. Butler, commanding officer.

Naval Medical School.—Captain Harold W. Smith, commanding officer.

Naval Hospital.—Captain George C. Thomas, commanding officer.

Attendance on Officers.—Commander William P. Mull.

FEDERAL ADMINISTRATIVE ORGANIZATION

President of the Board for Examination of Medical Officers.—Captain Harold W. Smith.

President of the Board of Examination of Dental Officers.—Captain Harold W. Smith.

Headquarters Marine Corps.—Major General Thomas Holcomb, Commandant; Brigadier General David D. Porter, Adjutant and Inspector; Brigadier General Hugh Matthews, Quartermaster; Brigadier General Harold C. Reisinger, Paymaster.

Naval Examining Board (Marine Corps).—Brigadier General Randolph C. Berkeley, President.

Marine Barracks.—Colonel Thomas S. Clarke, commanding.

DEPARTMENT OF THE INTERIOR

Secretary of the Interior.—Harold L. Ickes.

Charged with pensions, public lands, Indian Affairs, geological surveys, reclamation of arid lands, and mines.

Under Secretary.—Charles West.

First Assistant Secretary.—Theodore A. Walters.

Assistant Secretary.—Oscar L. Chapman.

Administrative Assistant and Budget Officer.—Ebert K. Burlew.

Chief Clerk.—Floyd E. Dotson.

Solicitor.—Nathan R. Margold.

Chief of Division of Classification.—John Harvey.

Commissioner of the General Land Office.—Fred W. Johnson.

Commissioner of the Bureau of Indian Affairs.—John Collier.

Commissioner of the Office of Education.—John W. Studebaker.

Director of the Geological Survey.—W. C. Mendenhall.

Commissioner of the Bureau of Reclamation.—Vacant.

Director of the National Park Service.—Arno B. Cammerer.

Director of the Bureau of Mines.—John W. Finch.

Territorial Officials.—

Alaska.—John W. Troy, Governor.
Hawaii.—Joseph B. Poindexter, Governor.

Virgin Islands.—Lawrence W. Cramer, Governor.

Puerto Rico.—Blanton Winship, Governor.

The Alaska Railroad.—Otto F. Ohlson, General Manager.

Oil Administration.—Harold L. Ickes, Secretary of the Interior, Administrator.

DEPARTMENT OF AGRICULTURE

Secretary of Agriculture.—Henry A. Wallace.

Under Secretary.—Vacant.

Assistant Secretary.—Milburn L. Wilson.

Assistants to the Secretary.—Paul H. Appleby, James D. Le Cron, Milo R. Perkins.

Agricultural Adjustment Administration.—H. R. Tolley, Administrator.

Director of Extension Work.—C. W. Warburton.

Director of Research.—James T. Jardine.

Director of Personnel.—W. W. Stockberger.

Director of Information.—Milton S. Eisenhower.

Director of Finance and Budget Officer.—W. A. Jump.

Solicitor.—Mastin G. White.

Librarian.—Claribel R. Barnett.

Office of Experiment Stations.—James T. Jardine, Chief.

Weather Bureau.—Willis R. Gregg, Chief.

Bureau of Animal Industry.—John R. Mohler, Chief.

Bureau of Dairy Industry.—O. E. Reed, Chief.

Bureau of Plant Industry.—Frederick D. Richey, Chief.

Forest Service.—F. A. Silcox, Chief.

Bureau of Chemistry and Soils.—Henry G. Knight, Chief.

Bureau of Entomology and Plant Quarantine.—Lee A. Strong, Chief.

Bureau of Biological Survey.—Ira N. Gabrielson, Chief.

Bureau of Public Roads.—Thomas H. MacDonald, Chief.

Bureau of Agricultural Economics.—Albert G. Black, Chief.

Bureau of Agricultural Engineering.—S. H. McCrory, Chief.

Bureau of Home Economics.—Louise Stanley, Chief.

III. THE NATIONAL GOVERNMENT

Commodity Exchange Administration.—J. W. T. Duvel, Chief.
Food and Drug Administration.—W. G. Campbell, Chief.
Economic Adviser.—Mordecai Ezekiel.

DEPARTMENT OF COMMERCE

Secretary of Commerce.—Daniel C. Roper.
Assistant Secretaries.—Ernest G. Draper, J. M. Johnson.
Administrative Assistant to the Secretary.—Malcolm Kerlin.
Solicitor.—South Trimble, Jr.
Chief Clerk and Superintendent.—E. W. Libbey.
Chief of Division of Accounts.—Charles E. Molster.
Chief of Division of Personnel.—Edward J. Gardner.
Chief of Division of Publications.—Thomas F. McKeon.
Chief of Division of Purchases and Sales.—Walter S. Erwin.
Librarian.—Charlotte L. Carmody.
Director of Air Commerce.—Eugene L. Vidal.
Director of the Bureau of Census.—William L. Austin.
Director of the Bureau of Foreign and Domestic Commerce.—Alexander V. Dye.
Director of the Bureau of Standards.—Lyman J. Briggs.
Commissioner of the Bureau of Fisheries.—Frank T. Bell.
Commissioner of the Bureau of Lighthouses.—Harold D. King.
Director of the Coast and Geodetic Survey.—R. S. Patton.
Director of the Bureau of Marine Inspection and Navigation.—Joseph B. Weaver.
Com.issioner of the Patent Office.—Conway P. Coe.

DEPARTMENT OF LABOR

Secretary of Labor.—Frances Perkins.
Charged with the duty of fostering, promoting and developing the welfare of the wage earners of the United States and also working towards a solution of the labor problems.
The Assistant Secretary.—Edward F. McGrady.

Second Assistant Secretary.—Vacant.

Assistant to the Secretary.—Richardson Saunders.

Special Assistant to the Secretary.—Mary La Dame.

Solicitor.—Charles O. Gregory.

Chief Clerk.—Samuel J. Gompers.

Director of Conciliation.—Hugh L. Kerwin.

Director of Labor Standards.—Verne A. Zimmer.

Commissioner of Labor Statistics.—Isador Lubin.

Commissioner of Immigration and Naturalization.—Daniel W. MacCormack.

Chief of the Children's Bureau.—Katharine F. Lenroot.

Director of the Women's Bureau.—Mary Anderson.

United States Employment Service.—W. Frank Persons, Director.

United States Housing Corporation.—Turner W. Battle, President.

MISCELLANEOUS EXECUTIVE SERVICES

Civil Service Commission.—Harry B. Mitchell, President; Leonard D. White, Mrs. Lucille F. McMillin.

Interstate Commerce Commission.—Carroll Miller, Chairman; Balthasar H. Meyer, Clyde B. Aitchison, Joseph B. Eastman, Frank McManamy, Claud R. Porter, William E. Lee, Charles D. Mahaffie, Hugh M. Tate, Walter M. W. Splawn, Marion M. Caskie.

United States Employees' Compensation Commission.—Mrs. Jewell W. Swofford, Chairman; Harry Bassett, John M. Morin.

General Accounting Office.—Vacant.

United States Railroad Administration.—Henry Morgenthau, Jr., Secretary of the Treasury, Director General.

Federal Reserve Board.—Mariner S. Eccles, Chairman; Ronald Ramson, Vice Chairman; Joseph A. Broderick, M. S. Szymczak, John McKee, Chester C. Davis.

Federal Trade Commission.—W. A. Ayres, Chairman; Edwin L. Davis, Garland S. Ferguson, Jr., R. E.

FEDERAL ADMINISTRATIVE ORGANIZATION

Freer, Charles H. March, Otis B. Johnson, Secretary.

United States Tariff Commission.—Robert L. O'Brien, Chairman; Thomas Walter Page, Vice Chairman; Oscar B. Ryder, Edgar B. Brossard, Raymond B. Stevens, E. Dana Durand, Sidney Morgan, Secretary.

United States Board of Tax Appeals.—Eugene Black, Chairman.

Federal Power Commission.—Frank R. McNinch, Chairman; Basil Manly, Vice Chairman; Herbert J. Drane, Claude L. Draper, Clyde L. Seavey, Leon M. Fuquay, Acting Secretary.

Federal Home Loan Bank Board.—John A. Fahey, Chairman.

Federal Emergency Administration of Public Works.—Harold L. Ickes, Administrator.

Federal Communications Commission.—Anning S. Prall, Chairman.

Federal Housing Administration.—Stewart McDonald, Administrator.

Veterans' Administration.—Brigadier General Frank T. Hines, Administrator; Omer W. Clark, Assistant Administrator, Pensions; Bynum Cash, Director of National Homes Service.

Federal Board for Vocational Education.—Frances Perkins, Chairman.

National Mediation Board.—James W. Carmalt, Chairman.

United States Shipping Board.—J. C. Peacock, Director.

National Advisory Committee for Aeronautics.—Dr. Joseph S. Ames, Chairman.

Board of Surveys and Maps of the Federal Government.—E. C. Bebb, Chairman.

The Commission of Fine Arts.—Charles Moore, Chairman.

Reconstruction Finance Corporation.—Jesse H. Jones, Chairman.

Smithsonian Institution.—

Established 1846 under the terms of the will of James Smithson for the "increase and diffusion of knowledge among men." The former aim is accomplished by the promoting of original, scientific research, and the latter by publications and lectures. The affairs of the Institution are

managed by a Board of Regents which cooperates with the Government and with National scientific bodies. Under the direction of the Institution are the National Museum, charged with preserving and utilizing objects of art and ethnological, geological and mineralogical collections belonging to the United States; Bureau of American Ethnology, National Gallery of Art, Freer Gallery of Art, National Zoological Park, Astrophysical Observatory, and the Regional Bureau for the United States International Catalogue of Scientific Literatures.

Secretary.—C. G. Abbott.

National Academy of Sciences.

—Frank R. Lillie, President; Arthur L. Day, Vice President; Frederick E. Wright, Home Secretary; Thomas H. Morgan, Foreign Secretary; Ludvig Hektoen, Chairman of the National Research Council.

Pan-American Union.—L. S. Rowe, Director General.

American National Red Cross.—Cary T. Grayson, Chairman.

Tennessee Valley Authority.—Arthur E. Morgan, Chairman.

Farm Credit Administration.—W. I. Myers, Governor.

Federal Coordinator of Transportation.—Joseph B. Eastman.

Federal Emergency Relief Administration.—Harry L. Hopkins, Administrator.

Securities and Exchange Commission.—James M. Landis, Chairman.

Tennessee Valley Authority.—Arthur E. Morgan Chairman; H. A. Morgan, David E. Lilienthal, directors.

Resettlement Administration.—Vacant.

National Youth Administration.—Aubrey Williams, Executive Director.

Federal Deposit Insurance Corporation.—Leo T. Crowley, Chairman.

Commodity Credit Corporation.—Lynn P. Talley, President.

National Labor Relations Board.—J. Warren Madden, Chairman.

Social Security Board.—John G. Winant, Chairman.

III. THE NATIONAL GOVERNMENT

MEMBERS OF THE SENATE

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1937

(Dates show beginning of service in the Senate. Names of Republicans are in Roman type; those of Democrats in *Italic*; Farmer-Labor in ROMAN CAPS.)

ALABAMA

John H. Bankhead, 2d (1931).
Hugo L. Black (1927).

ARIZONA

Henry F. Ashurst (1912).
Carl Hayden (1927).

ARKANSAS

H. W. Caraway (1931).
Joseph T. Robinson (1913).

CALIFORNIA

Hiram W. Johnson (1917).
William G. McAdoo (1933).

COLORADO

Alva B. Adams (1933).
Edwin C. Johnson (1936).

CONNECTICUT

Augustine Lonergan (1933).
Francis T. Maloney (1935).

DELAWARE

James H. Hughes (1936).
John G. Townsend, Jr. (1929).

FLORIDA

Claude Pepper (1936).
Charles O. Andrews (1936).

GEORGIA

Walter F. George (1922).
Richard B. Russell, Jr. (1933).

IDAHO

William E. Borah (1907).
James P. Pope (1933).

ILLINOIS

William H. Dieterich (1933).
J. Hamilton Lewis (1931).

INDIANA

Sherman Minton (1935).
Frederick Van Nuys (1933).

IOWA

Guy M. Gillette (1936).
Clyde L. Herring (1936).

KANSAS

Arthur Capper (1919).
George McGill (1931).

KENTUCKY

Alben W. Barkley (1927).
M. M. Logan (1931).

LOUISIANA

John H. Overton (1933).
Allen J. Ellender (1936).

MAINE

Frederick Hale (1917).
Wallace H. White, Jr. (1931).

MARYLAND

George L. Radcliffe (1935).
Millard E. Tydings (1927).

MASSACHUSETTS

Henry Cabot Lodge, Jr. (1936).
David I. Walsh (1926).

MICHIGAN

Prentiss M. Brown (1936).
Arthur H. Vandenberg (1928).

MINNESOTA

HENRIK SHIPSTEAD (1923).
ERNEST LUNDEEN (1936).

MISSISSIPPI

Theodore G. Bilbo (1935).
Pat Harrison (1919).

MISSOURI

Bennett C. Clark (1933).
Harry S. Truman (1935).

MONTANA

James E. Murray (1935).
Burton K. Wheeler (1923).

NEBRASKA

Edward R. Burke (1935).
George W. Norris (1913).

NEVADA

Patrick A. McCarran (1933).
Key Pittman (1913).

NEW HAMPSHIRE

Fred H. Brown (1933).
H. Styles Bridges (1936).

NEW JERSEY

William H. Smathers (1936).
Arthur H. Moore (1935).

NEW MEXICO

Dennis Chavez (1935).
Carl A. Hatch (1934).

NEW YORK

Royal S. Copeland (1923).
Robert F. Wagner (1927).

NORTH CAROLINA

Josiah W. Bailey (1931).
Robert R. Reynolds (1932).

NORTH DAKOTA

Lynn J. Frazier (1923).
Gerald P. Nye (1925).

OHIO

Robert J. Bulkley (1931).
Vic Donahey (1935).

OKLAHOMA

Josh Lee (1936).
Elmer Thomas (1927).

OREGON

Charles L. McNary (1918).
Frederick Steiwer (1927).

PENNSYLVANIA

James J. Davis (1931).
Joseph F. Guffey (1935).

RHODE ISLAND

Peter G. Gerry (1935).
Theodore F. Green (1936).

SOUTH CAROLINA

James F. Byrnes (1931).
Ellison D. Smith (1909).

SOUTH DAKOTA

William J. Bulow (1931).
Vacant.

TENNESSEE

Nathan L. Bachman (1933).
Kenneth McKellar (1917).

TEXAS

Tom Connally (1929).
Morris Sheppard (1913).

UTAH

William H. King (1917).
Elbert D. Thomas (1933).

VERMONT

Warren R. Austin (1931).
Ernest W. Gibson (1933).

VIRGINIA

Harry F. Byrd (1933).
Carter Glass (1920).

WASHINGTON

Homer T. Bone (1933).
Lewis B. Schewellenbach (1935).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

WEST VIRGINIA

Rush D. Holt (1935).
Matthew N. Neely (1931).

WISCONSIN

F. Ryan Duffy (1933).
Robert M. LaFollette, Jr.
(1925).

WYOMING

H. H. Schwartz (1936).
Joseph C. O'Mahoney (1933).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1937

(Dates show beginning of service in the House. Names of Republicans are in Roman type; those of Democrats in *Italic*; Farmer-Labor in ROMAN CAPS; Progressives in SMALL CAPS.)

ALABAMA

1. *Frank W. Boykin* (1935).
2. *Lister Hill* (1923).
3. *Henry B. Steagall* (1914).
4. *Sam Hobbs* (1935).
5. *Joe Starnes* (1935).
6. *Pete Jarman* (1936).
7. *William B. Bankhead*
(1917).
8. *John J. Sparkman* (1936).
9. *Luther Patrick* (1936).

ARIZONA

At Large—*John R. Murdock*
(1936).

ARKANSAS

1. *William J. Driver* (1921).
2. *John E. Miller* (1931).
3. *Claude A. Fuller* (1929).
4. *Ben Cravens* (1933).
5. *David D. Terry* (1934).
6. *John L. McClellan*
(1935).
7. *Wade H. Kitchens* (1936).

CALIFORNIA

1. *Clarence F. Lea* (1917).
2. *Harry L. Englebright*
(1926).
3. *Frank H. Buck* (1933).
4. FRANK R. HAVENNER
(1936).
5. *Richard J. Welch* (1925).
6. *Albert E. Carter* (1925).
7. *John H. Tolan* (1935).
8. *John J. McGrath* (1933).
9. *Bertrand W. Gearhart*
(1935).
10. *Henry E. Stubbs* (1933).
11. *John S. McGroarty*
(1935).
12. *H. Jerry Voorhis* (1936).
13. *Charles Kramer* (1933).
14. *Thomas F. Ford* (1933).
15. *John M. Costello* (1935).
16. *John F. Dockweiler*
(1933).
17. *Charles J. Colden* (1933).
18. *Byron N. Scott* (1935).
19. *Harry R. Sheppard*
(1936).
20. *Ed. V. Izac* (1936).

COLORADO

1. *Lawrence Lewis* (1933).
2. *Fred Cummings* (1933).
3. *John A. Martin* (1933).
4. *Edward T. Taylor* (1909).

CONNECTICUT

- At Large—*William M. Citron*
(1935).
1. *Herman P. Kopplemann*
(1933).
 2. *William J. Fitzgerald*
(1936).
 3. *James A. Shanley* (1935).
 4. *Alfred N. Phillips, Jr.*
(1936).
 5. *J. Joseph Smith* (1935).

DELAWARE

At Large—*William F. Allen*
(1936).

FLORIDA

1. *James H. Peterson* (1933).
2. *Robert A. Green* (1925).
3. *Millard F. Caldwell*
(1933).
4. *J. Mark Wilcox* (1935).
5. *Joe Hendricks* (1936).

GEORGIA

1. *Hugh Peterson* (1935).
2. *E. E. Cox* (1925).
3. *Stephen Pace* (1936).
4. *Emmett M. Owen* (1933).
5. *Robert Ramspeck* (1929).
6. *Carl Vinson* (1914).
7. *Malcolm C. Tarver* (1927).
8. *Braswell D. Deen* (1933).
9. *B. Frank Wheelchel* (1935).
10. *Paul Brown* (1933).

IDAHO

1. *Compton I. White* (1933).
2. *D. Worth Clark* (1935).

ILLINOIS

- At Large—*Edwin W. Champion* (1936).
Lewis M. Long (1936).
1. *Arthur W. Mitchell*
(1935).
 2. *Raymond S. McKeough*
(1935).
 3. *Edward A. Kelly* (1931).
 4. *Harry P. Beam* (1931).
 5. *Adolph J. Sabath* (1907).
 6. *Thomas J. O'Brien*
(1933).
 7. *Leonard W. Schuetz*
(1931).
 8. *Leo Kocialkowski* (1933).
 9. *James McAndrews*
(1935).
 10. *Ralph E. Church* (1935).
 11. *Chauncey W. Reed*
(1935).

12. *Noah M. Mason* (1936).
13. *Leo E. Allen* (1933).
14. *Chester Thompson* (1933).
15. *Lewis L. Boyer* (1936).
16. *Everett M. Dirksen*
(1933).
17. *Leslie C. Arends* (1925).
18. *James A. Meeks* (1933).
19. *Hugh M. Rigney* (1936).
20. *Scott W. Lucas* (1935).
21. *Frank W. Fries* (1936).
22. *Edwin M. Schaefer* (1933).
23. *Laurence F. Arnold*
(1936).
24. *Claude V. Parsons* (1930).
25. *Kent E. Keller* (1931).

INDIANA

1. *William T. Schulte*
(1933).
2. *Charles A. Halleck*
(1935).
3. *Samuel B. Pettengill*
(1931).
4. *James I. Farley* (1933).
5. *Glenn Griswold* (1931).
6. *Virginia E. Jenckes*
(1933).
7. *Arthur H. Greenwood*
(1933).
8. *John W. Boehne, Jr.*
(1933).
9. *Eugene B. Crowe* (1931).
10. *Finly H. Gray* (1933).
11. *William H. Larrabee*
(1931).
12. *Louis Ludlow* (1929).

IOWA

1. *Edward C. Eicher* (1933).
2. *William S. Jacobsen*
(1936).
3. *John W. Gwynne* (1935).
4. *Fred Biermann* (1933).
5. *Lloyd Thurston* (1933).
6. *Cassius C. Dowell* (1936).
7. *Otha D. Wearin* (1933).
8. *Fred C. Gilchrist* (1931).
9. *Vincent F. Harrington*
(1936).

KANSAS

1. *W. P. Lambertson*
(1929).
2. *U. S. Guyer* (1926).
3. *Edward W. Patterson*
(1935).
4. *Edward H. Rees* (1936).
5. *John M. Houston* (1935).
6. *Frank Carlson* (1935).
7. *Clifford R. Hope* (1926).

III. THE NATIONAL GOVERNMENT

KENTUCKY

1. Noble J. Gregory (1936).
2. Vacant
3. Emmet O'Neil (1935).
4. Edward W. Creal (1935).
5. Brent Spence (1931).
6. Virgil Chapman (1931).
7. Andrew J. May (1931).
8. Fred M. Vinson (1931).
9. John M. Robison (1935).

LOUISIANA

1. Joachim O. Fernandez (1931).
2. Paul H. Maloney (1931).
3. Robert L. Mouton (1936).
4. Overton Brooks (1936).
5. Neut V. Mills (1936).
6. John K. Griffith (1936).
7. E. L. DeRouen (1927).
8. A. Leonard Allen (1936).

MAINE

1. James C. Oliver (1936).
2. Clyde H. Smith (1936).
3. Ralph O. Brewster (1935).

MARYLAND

1. T. A. Goldsborough (1921).
2. Wm. P. Cole, Jr. (1931).
3. V. L. Palmisano (1927).
4. Ambrose J. Kennedy (1932).
5. S. W. Gambrill (1924).
6. David J. Lewis (1931).

MASSACHUSETTS

1. A. T. Treadway (1913).
2. Charles R. Clason (1936).
3. Joseph E. Casey (1935).
4. E. H. Holmes (1931).
5. Pehr N. Rogers (1925).
6. George J. Bates (1936).
7. W. F. Connerly, Jr. (1923).
8. Arthur D. Healey (1933).
9. Robert Luce (1936).
10. G. H. Tinkham (1915).
11. John P. Higgins (1935).
12. J. W. McCormack (1928).
13. R. B. Wigglesworth (1928).
14. J. W. Martin, Jr. (1925).
15. Charles L. Gifford (1922).

MICHIGAN

1. George G. Sadowski (1933).
2. Earl C. Michener (1935).
3. Paul W. Shafer (1936).
4. Clare E. Hoffman (1935).
5. Carl E. Mapes (1913).
6. Andrew J. Transue (1936).
7. Jesse P. Wolcott (1931).
8. Fred L. Crawford (1935).
9. Albert J. Engel (1935).
10. Roy O. Woodruff (1921).
11. John Luecke (1936).
12. Frank E. Hook (1935).
13. George D. O'Brien (1936).
14. Louis C. Rabaut (1935).
15. John D. Dingell (1933).
16. John Lesinski (1933).

17. George A. Dondero (1933).

MINNESOTA

1. August H. Andreson (1935).
2. Elmer J. Ryan (1935).
3. HENRY G. TEIGAN (1936).
4. Melvin J. Maas (1935).
5. DEWEY W. JOHNSON (1936).
6. Harold Knutson (1917).
7. PAUL J. KVALE (1923).
8. JOHN T. BERNARD (1936).
9. RICHARD T. BUCKLER (1935).

MISSISSIPPI

1. John E. Rankin (1921).
2. Wall Doxey (1929).
3. W. M. Whittington (1925).
4. A. L. Ford (1935).
5. Ross A. Collins (1936).
6. William M. Colmer (1933).
7. Dan R. McGehee (1935).

MISSOURI

1. M. A. Romjue (1923).
2. William L. Nelson (1935).
3. Richard M. Duncan (1933).
4. Charles J. Bell (1935).
5. Joseph B. Shannon (1931).
6. Reuben T. Wood (1933).
7. Dewey Short (1935).
8. Clyde Williams (1931).
9. Clarence Cannon (1923).
10. Orville Zimmerman (1935).
11. Thomas C. Hennings, Jr. (1935).
12. C. Arthur Anderson (1936).
13. John J. Cochran (1927).

MONTANA

1. Jerry J. O'Connell (1936).
2. James F. O'Connor (1936).

NEBRASKA

1. Henry C. Luckey (1935).
2. Charles F. McLaughlin (1935).
3. Karl Stefan (1935).
4. Charles G. Binderup (1935).
5. Harry B. Coffee (1935).

NEVADA

- At Large—James G. Scrugham (1933).

NEW HAMPSHIRE

1. Alphonse Roy (1936).
2. Charles W. Tobey (1933).

NEW JERSEY

1. C. A. Wolverton (1926).
2. Elmer H. Wene (1936).
3. William H. Sutphin (1931).
4. D. Lane Powers (1933).
5. Charles A. Eaton (1925).
6. Donald H. McLean (1933).
7. J. Parnell Thomas (1936).
8. George N. Seger (1923).
9. Edward A. Kenney (1933).
10. F. A. Hartley, Jr. (1929).
11. Edward L. O'Neill (1936).
12. Frank W. Towey, Jr. (1936).
13. Mary T. Norton (1925).
14. Edward J. Hart (1935).

NEW MEXICO

- At Large—John J. Dempsey (1935).

NEW YORK

- At Large—Matthew J. Merrit (1935).
- Caroline O'Day (1935).
1. Robert L. Bacon (1923).
2. B. Barry (1935).
3. Joseph L. Pfeifer (1935).
4. Thomas H. Cullen (1919).
5. Marcellus H. Evans (1935).
6. Andrew L. Somers (1925).
7. John J. Delaney (1931).
8. Donald L. O'Toole (1936).
9. Eugene J. Keogh (1936).
10. Emanuel Celler (1923).
11. James A. O'Leary (1935).
12. Samuel Dickstein (1923).
13. C. D. Sullivan (1917).
14. W. I. Sirovich (1927).
15. John J. Boylan (1923).
16. John O'Connor (1923).
17. Theodore A. Peyser (1933).
18. M. J. Kennedy (1930).
19. Sol Bloom (1923).
20. James J. Lanzetta (1936).
21. J. A. Gavagan (1929).
22. Edward W. Curley (1936).
23. Charles A. Buckley (1935).
24. J. M. Fitzpatrick (1926).
25. Charles D. Millard (1931).
26. Hamilton Fish (1920).
27. Philip A. Goodwin (1933).
28. William T. Byrne (1936).
29. E. Harold Cluett (1936).
30. Frank Crowther (1919).
31. Bertrand H. Snell (1915).
32. Francis D. Culkin (1928).
33. Fred J. Douglas (1936).
34. Bert Lord (1935).
35. C. E. Hancock (1927).
36. John Taber (1923).
37. W. Sterling Cole (1935).
38. George B. Kelly (1936).
39. James W. Wadsworth (1933).
40. Walter G. Andrews (1931).
41. Alfred F. Beiter (1933).

MEMBERS OF THE HOUSE OF REPRESENTATIVES

42. *James M. Mead* (1919).
43. *Daniel A. Reed* (1919).

NORTH CAROLINA

1. *Lindsay C. Warren* (1925).
2. *John H. Kerr* (1923).
3. *Graham A. Barden* (1935).
4. *Harold D. Cooley* (1935).
5. *Frank Hancock* (1930).
6. *William B. Umstead* (1933).
7. *J. Bayard Clark* (1929).
8. *John W. Lambeth* (1931).
9. *R. L. Doughton* (1911).
10. *A. L. Bulwinkle* (1931).
11. *Zebulon Weaver* (1931).

NORTH DAKOTA

- At Large—*Usher L. Burdick* (1935).
William Lemke (1933).

OHIO

- At Large—*John McSweeney* (1936).
Harold G. Mosier (1936).
1. *Joseph A. Dixon* (1936).
 2. *Herbert S. Bigelow* (1936).
 3. *Byron B. Harlan* (1931).
 4. *Frank L. Kloeb* (1933).
 5. *Frank C. Kniffin* (1931).
 6. *James G. Polk* (1931).
 7. *Arthur W. Aleshire* (1936).
 8. *Brooks Fletcher* (1933).
 9. *John F. Hunter* (1936).
 10. *T. A. Jenkins* (1925).
 11. *Harold K. Claypool* (1936).
 12. *Arthur P. Lamneck* (1931).
 13. *Dudley A. White* (1936).
 14. *Dow W. Harter* (1933).
 15. *Robert T. Secrest* (1933).
 16. *William R. Thom* (1933).
 17. *William A. Ashbrook* (1935).
 18. *Lawrence E. Imhoff* (1933).
 19. *Michael J. Kirwan* (1936).
 20. *Martin L. Sweeney* (1931).
 21. *Robert Crosser* (1923).
 22. *Anthony A. Fleger* (1936).

OKLAHOMA

- At Large—*Will Rogers* (1933).
1. *Wesley E. Disney* (1931).
 2. *Jack Nichols* (1935).
 3. *Wilburn Cartwright* (1927).
 4. *Lyle H. Boren* (1936).
 5. *R. P. Hill* (1936).
 6. *Jed Johnson* (1926).
 7. *Sam C. Massingale* (1935).
 8. *Phil Ferguson* (1935).

OREGON

1. *James W. Mott* (1933).
2. *Walter M. Pierce* (1933).

3. *Nan W. Honeyman* (1936).

PENNSYLVANIA

1. *Leon Sacks* (1936).
2. *James P. McGranery* (1936).
3. *Michael J. Bradley* (1936).
4. *John B. Daly* (1935).
5. *Frank J. G. Dorsey* (1935).
6. *Michael J. Stack* (1935).
7. *Ira W. Drew* (1936).
8. *James Wolfenden* (1928).
9. *Oliver W. Frey* (1933).
10. *J. R. Kinzer* (1930).
11. *Patrick J. Boland* (1931).
12. *J. Harold Flannery* (1936).
13. *James H. Gildea* (1935).
14. *Guy L. Moser* (1936).
15. *Albert G. Rutherford* (1936).
16. *Robert F. Rich* (1930).
17. *J. William Ditter* (1933).
18. *Benjamin K. Focht* (1933).
19. *Guy J. Swope* (1936).
20. *Benjamin Jarrett* (1936).
21. *Francis E. Walter* (1933).
22. *Harry L. Haines* (1931).
23. *Don Gingery* (1935).
24. *J. Buell Snyder* (1933).
25. *Charles I. Faddis* (1933).
26. *Charles R. Eckert* (1935).
27. *Joseph Gray* (1935).
28. *Robert G. Allen* (1936).
29. *Charles N. Crosby* (1933).
30. *Peter J. De Muth* (1936).
31. *James L. Quinn* (1935).
32. *Herman P. Eberharter* (1936).
33. *Henry Ellenbogen* (1933).
34. *Matthew A. Dunn* (1933).

RHODE ISLAND

1. *Aime J. Forand* (1936).
2. *John M. O'Connell* (1933).

SOUTH CAROLINA

1. *T. S. McMillan* (1925).
2. *H. P. Fulmer* (1921).
3. *John C. Taylor* (1933).
4. *G. Heyward Mahon, Jr.* (1936).
5. *James P. Richards* (1933).
6. *Allard H. Gasque* (1928).

SOUTH DAKOTA

1. *Fred H. Hildebrandt* (1933).
2. *Francis H. Case* (1936).

TENNESSEE

1. *B. Carroll Reece* (1933).
2. *J. Will Taylor* (1919).
3. *S. D. McReynolds* (1923).
4. *John E. Mitchell* (1931).
5. *Richard M. Atkinson* (1936).

6. *Clarence W. Turner* (1933).
7. *Herron Pearson* (1935).
8. *Jere Cooper* (1929).
9. *Walter Chandler* (1935).

TEXAS

1. *Wright Patman* (1929).
2. *Martin Dies* (1931).
3. *Morgan G. Sanders* (1921).
4. *Sam Rayburn* (1913).
5. *H. W. Sumners* (1913).
6. *Luther A. Johnson* (1923).
7. *Nat Patton* (1935).
8. *Albert Thomas* (1936).
9. *J. J. Mansfield* (1917).
10. *J. P. Buchanan* (1913).
11. *William R. Poage* (1936).
12. *Fritz G. Lanham* (1919).
13. *William D. McFarlane* (1933).
14. *Richard M. Kleberg* (1931).
15. *Milton H. West* (1933).
16. *Robert E. Thomason* (1931).
17. *Clyde L. Garrett* (1936).
18. *Marvin Jones* (1917).
19. *George H. Mahon* (1935).
20. *Mauvy Maverick* (1935).
21. *Charles L. South* (1935).

UTAH

1. *Abe Murdock* (1933).
2. *J. W. Robinson* (1933).

VERMONT

- At Large—*Charles A. Plumley* (1935).

VIRGINIA

1. *Schuyler O. Bland* (1918).
2. *Norman R. Hamilton* (1936).
3. *A. J. Montague* (1913).
4. *Patrick H. Drewry* (1920).
5. *Thomas G. Burch* (1931).
6. *C. A. Woodrum* (1923).
7. *A. Willis Robertson* (1933).
8. *Howard W. Smith* (1931).
9. *John W. Flannagan, Jr.* (1931).

WASHINGTON

1. *Warren G. Magnuson* (1936).
2. *Monrad C. Wallgren* (1933).
3. *Martin F. Smith* (1933).
4. *Knute Hill* (1933).
5. *Charles H. Leavy* (1936).
6. *John M. Coffee* (1936).

WEST VIRGINIA

1. *Robert L. Ramsey* (1933).
2. *Jennings Randolph* (1933).
3. *Andrew Edmiston* (1933).
4. *George W. Johnson* (1933).
5. *John Kee* (1933).
6. *Joe L. Smith* (1929).

III. THE NATIONAL GOVERNMENT

WISCONSIN

1. THOMAS R. AMLIE (1935).
2. HARRY SAUTHOFF (1935).
3. GARDNER R. WITHROW (1931).
4. *Raymond J. Cannon* (1933).
5. *Thomas O'Malley* (1933).
6. *Michael K. Reilly* (1913).
7. GERALD J. BOILEAU (1931).

8. GEORGE J. SCHNEIDER (1935).

9. MERLIN HULL (1935).
10. B. J. GEHRMANN (1935).

WYOMING

At Large—*Paul R. Greever* (1935).

ALASKA

Anthony J. Dimond (1933).

HAWAII

Samuel W. King (1935).

PHILIPPINE ISLANDS

Quintin Paredes (1936).

PUERTO RICO

Santiago Iglesias (1933).

FEDERAL JUDICIAL ORGANIZATION

BY WILLIAM M. SCHUYLER

EDITOR, *The American Year Book*

SUPREME COURT OF THE UNITED STATES

Charles Evans Hughes (New York), Chief Justice of the United States, appointed 1930.

Willis Van Devanter (Wyoming), appointed 1910.

James Clark McReynolds (Kentucky), appointed 1914.

Louis Dembitz Brandeis (Kentucky), appointed 1916.

George Sutherland (Utah), appointed 1922.

Pierce Butler (Minnesota), appointed 1923.

Harlan F. Stone (New Hampshire), appointed 1925.

Owen J. Roberts (Pennsylvania), appointed 1930.

Benjamin N. Cardozo (New York), appointed 1932.

Officers of the Supreme Court:

Clerk.—Charles Elmore Cropley.

Deputy Clerks.—Reginald C. Dilli, Hugh W. Barr.

Marshal.—Frank Key Green.

Reporter.—Ernest Knaebel.

CIRCUIT COURT OF APPEALS OF THE UNITED STATES

First Circuit.—Mr. Justice Brandeis; George Hutchins Bingham (New Hampshire), Scott Wilson (Maine), James M. Morton, Jr. (Massachusetts).

Second Circuit.—Mr. Justice Stone; Martin T. Manton (New York), Learned Hand (New York), Thomas W. Swan (Connecticut), Augustus N. Hand (New York), Harrie Brigham Chase (Vermont), Julian W. Mack (New York).

Third Circuit.—Mr. Justice Roberts; Joseph Buffington (Pennsylvania), J. Warren Davis (New Jersey), Victor B. Woolley (Delaware), J. Whitaker Thompson (Pennsylvania).

Fourth Circuit.—Mr. Chief Justice Hughes; John J. Parker (North Carolina), Elliott Northcott (West Virginia), Morris A. Soper (Maryland).

Fifth Circuit.—Mr. Justice Cardozo; Rufus E. Foster (Louisiana), Samuel H. Sibley (Louisiana), Joseph C. Hutcheson, Jr. (Texas), Edwin R. Holmes (Mississippi).

Sixth Circuit.—Mr. Justice McReynolds; Charles H. Moorman (Kentucky), Xenophon Hicks (Tennessee), Julian W. Mack (New York), Charles C. Simons (Michigan), Florence E. Allen (Ohio).

Seventh Circuit.—Mr. Justice Van Devanter; Evan A. Evans (Wisconsin), William M. Sparks (Indiana), Two Vacancies.

Eighth Circuit.—Mr. Justice Butler; Kimbrough Stone (Missouri), vacant, John B. Sanborn (Minnesota), Archibald K. Gardner (South Dakota), Joseph W. Woodrough (Nebraska), Seth Thomas (Iowa).

Ninth Circuit.—Mr. Justice Sutherland; Curtis D. Wilbur (California), Francis A. Garrecht (Washington), William Denman (California), Clifton Mathews (Arizona), Bert Haney (Oregon).

Tenth Circuit.—Mr. Justice Van Devanter; Robert E. Lewis (Colorado), Orie L. Phillips (Colorado),

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

George T. McDermott (Kansas),
Sam G. Bratton (New Mexico).

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

William J. Graham (Illinois), Presiding Judge, appointed 1924.

Oscar E. Bland (Indiana), appointed 1923.

Charles Sherrod Hatfield (Ohio), appointed 1923.

Finis James Garrett (Tennessee), appointed 1929.

Irvine L. Lenroot (Wisconsin), appointed 1929.

UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA

George E. Martin, Chief Justice.

Charles H. Robb.

Josiah A. Van Orsdel.

D. Lawrence Groner.

Harold M. Stephens.

COURT OF CLAIMS OF THE UNITED STATES

Fenton Whitlock Booth (Illinois), Chief Justice, appointed 1928.

William Raymond Green (Iowa), appointed 1928.

Benjamin H. Littleton (Tennessee), appointed 1929.

Thomas S. Williams (Illinois), appointed 1929.

Richard Smith Whaley (South Carolina), appointed 1930.

DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

Alfred A. Wheat, Chief Justice.

James M. Proctor.

F. Dickinson Letts.
Daniel W. O'Donoghue.
Jennings Bailey.
Peyton Gordon.
Oscar R. Luhring.
Joseph W. Cox.
Jesse C. Adkins.

UNITED STATES CUSTOMS COURT

Charles P. McClelland, Presiding Judge.

Walter H. Evans.

William J. Tilson.

Jerry B. Sullivan.

George Stewart Brown.

Frederick W. Dallinger

Genevieve R. Cline.

David H. Kincheloe.

William J. Keefe.

UNITED STATES MARSHAL'S OFFICE

United States Marshal.—John P. Colpoys.

Chief Deputy Marshal.—Thomas E. Ott.

UNITED STATES ATTORNEY'S OFFICE

United States Attorney, District of Columbia.—Leslie C. Garnett.

Assistants.—John W. Fihelly, David A. Hart, Charles B. Murray, Isadore I. Goldstein, John J. Wilson, Roger Robb, David A. Pine, Harry L. Underwood, Karl Kindleberger, George E. McNeil, Cecil R. Heflin, Samuel F. Beach, Louis L. Whitestone, Clinton D. Vernon, Allen J. Krouse, William Hitz, Jr., Eugene Carusi, Arthur B. Caldwell, Arthur J. McLaughlin, John W. Jackson.

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

By ERWIN N. GRISWOLD

PROFESSOR, HARVARD LAW SCHOOL

GENERAL

The year 1936 produced even more than the usual amount of important public litigation before the Federal courts. The lower courts in particular were faced with an unusually diverse and difficult series of problems resulting more or less directly from the legislation of the Roosevelt Administration. In the

language of Mr. Justice Cardozo, these have been cases in which "great issues are involved, great in their complexity, great in their significance." It is not surprising, therefore, that there has been much divergence of judicial opinion in the preliminary handling of these cases.

In the immediately preceding years much of the litigation in the lower

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courts took the form of skirmishes preliminary to the real battle before the Supreme Court. In 1936, however, the lower courts were required to devote a considerable amount of time to problems arising as a result of decisions made by the Supreme Court. As before, the leading cases in the Supreme Court involving questions of general constitutional law are discussed elsewhere (see "The Supreme Court and Constitutional Law," pp. 37-57), and accordingly no further reference is made to them here. Ordinarily, it takes a considerable amount of time for litigation to make its way to the highest court, and a survey of lower court decisions may give a truer cross-section of the legal problems which were being mooted during the year.

THE A. A. A. DECISION AND ITS AFTERMATH

Disposition of "Impounded Cash."—The year began with the decision of the Supreme Court in *United States v. Butler*, 297 U.S. 1, holding invalid the processing taxes imposed by the Agricultural Adjustment act. This decision did result in the termination of a great many cases which had been filed in the lower courts, but it also resulted in the raising of many new problems. The first of these had to do with the proper disposition of the so-called "impounded cash," processing tax payments which had been paid into court pending the decision of the validity of the tax. In *Rickert Rice Mills v. Fontenot*, 297 U.S. 110, decided only one week after the *Butler* decision, the Supreme Court rather summarily ordered that these amounts be returned to the processors despite the apparently plain provisions of Section 3226 of the Revised Statutes forbidding injunctions against the collection of a tax, and despite the fact that many of the processors had already passed on the burden of the tax to their customers. With this ruling from the Supreme Court, the lower courts naturally followed suit.

Processing Tax Refunds.—The "impounded cash," of course, repre-

sented only a small portion of the total processing tax payments. The next problem confronting processors and their customers was the obtaining of refunds of the taxes actually paid under the act now declared invalid. As these taxes amounted to well over \$1,000,000,000, the problem was a serious one for all concerned. At the beginning of the summer, Congress set up elaborate machinery for the consideration of these refund claims and allowing refunds only to processors who could show that they had in fact borne the burden of the tax themselves. The legal lines of battle with respect to this provision were beginning to form at the close of the year.

Windfall Tax.—Because the refunds of "impounded cash" represented in many cases a windfall of substantial proportions to the processors, Congress sought to reach these amounts by imposing a tax of 80 per cent on "unjust enrichment." This tax is popularly known as the "windfall tax." Whether it will be eventually sustained is a matter which cannot be told from the viewpoint of 1936. Numerous suits, however, were filed toward the end of the year for the purpose of enjoining the collection of this tax. Two lower courts refused such injunctions, while a district court in Indiana, in *Kingan & Co. v. Smith*, held that the tax was invalid and that its collection should be enjoined. Two of these cases were pending before Circuit Courts of Appeals at the close of the year.

Marketing Control.—After the processing tax was held unconstitutional, the question remained whether other parts of the Agricultural Adjustment Act might nevertheless stand. This issue was presented particularly with respect to marketing control agreements and orders under that statute. No conclusive result was reached by the courts on this point. In *United States v. Edwards*, 14 F. Supp. 384, a district court in California upheld the power of the Secretary of Agriculture to make orders regulating the marketing of oranges. In two other cases involving orders relating to the marketing

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of milk, however, district courts in Massachusetts and in the District of Columbia reached the opposite result, *United States v. David Buttrick Co.*, 15 F. Supp. 655; *Ganley v. Wallace*.

LABOR RELATIONS ACT

Injunction Litigation.—The year was marked by a continued large volume of litigation arising out of the efforts of the Federal Government to control labor relations. A great number of suits were filed in district courts to enjoin various acts and orders of the National Labor Relations Board. In most of these the injunction was sought on the ground that the activity involved was not sufficiently related to interstate commerce to warrant the intervention of the Federal Government. In many of the cases injunctions were granted by the district courts, although a considerable diversity of opinion developed. In one decision a Circuit Court of Appeals upheld the act as applied to the Associated Press, *National Labor Relations Board v. Associated Press*, 85 F. (2d) 56. In other cases Circuit Courts of Appeals held that Congress could not validly apply the act to manufacturing corporations: *National Labor Relations Board v. Jones & Laughlin Steel Corp.*, 83 F. (2d) 998; *National Labor Relations Board v. Friedman-Harry Marks Clothing Co.*, 83 F. (2d) 731, 85 F. (2d) 1; *National Labor Relations Board v. Freuhauf Trailer Co.*, 85 F. (2d) 391. Proceedings to review all of these decisions were brought to the Supreme Court towards the end of the year.

Railway Labor Act.—A closely related problem was presented with respect to the validity of the Railway Labor Act. In *Virginian Railway Co. v. System Federation No. 40*, 84 F. (2d) 641, the Circuit Court of Appeals for the Fourth Circuit upheld the act as applied to an interstate railroad approximately one-third of whose mechanical department employees are engaged in the repair of locomotives and cars temporarily withdrawn from service. A

review of this case, too, was pending before the Supreme Court at the close of the year.

Railroad Retirement Act.—After the Supreme Court had invalidated the first Railroad Retirement Act, Congress sought to avoid the effect of the decision by reenacting the Act as two statutes, one statute providing for a tax, and the other providing for the payment of retirement allowances. Little effort was made in drafting the new statutes to meet the substantial objections found by the Court in the earlier act. There was small basis for surprise, therefore, when the new act met the fate of the previous one and was likewise held unconstitutional by the District of Columbia court, *Alton Railroad Co. v. Railroad Retirement Board*.

THE SECURITIES ACT

The Agricultural Adjustment Act and its resultant problems are the legal evidences of one effort of the Federal Government in the economic field. Another such effort, and to date a more successful one, from the legal point of view, is found in the establishment of the Securities and Exchange Commission. Although the powers of this body have existed for more than three years, it has not yet had to face a major Supreme Court test. There have been a few preliminary skirmishes with divergent results. But the year 1936 passed without any serious doubts being cast on the fundamental validity of the Securities Act. In *Jones v. Securities and Exchange Commission*, 298 U. S. 1, the Supreme Court held that the Commission could not compel the testimony of a person who had filed a registration statement but thereafter had withdrawn it. In other cases the validity of the Securities Act had been upheld by lower courts, but none of these decisions was passed on by the Supreme Court during the year.

THE UTILITIES ACT

The chief litigation relating to the Securities Commission arose out of its duty of enforcing the Public

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Utility Holding Company Act of 1935. At the beginning of the year the Circuit Court of Appeals for the Fourth Circuit held in *Burco, Inc. v. Whitworth*, 81 F. (2d) 721, that that act was invalid as applied to the receivers of a holding company and to its subsidiaries which were not engaged in interstate commerce. Although the parties to the case joined in seeking review by the Supreme Court, the Government opposed this action, chiefly on the ground that the case presented a more or less feigned issue. The Supreme Court apparently accepted the Government's view for it declined to review the proceeding.

In the meantime the Government had brought a proceeding against the Electric Bond & Share Corporation in the New York district court seeking to enforce the act, while other utility companies filed suits in the District of Columbia courts for the purpose of enjoining that enforcement. The Government, claiming its practical inability to handle all of the cases at once, applied for a stay of the proceedings in the District of Columbia courts until the Electric Bond & Share case should be decided. Such a stay was granted by the district court; this order was reversed by the Court of Appeals in mid-summer; and finally at the end of the year, in *Landis v. North American Co.*, the Supreme Court ultimately held that it was proper to grant a stay, but that the stay which the district court did grant was for an unreasonably long time. In the meantime the Electric Bond & Share case was tried and argued before the New York court, but no decision had been announced near the end of the year.

SECOND FRAZIER-LEMKE ACT

The litigation begun in 1935 concerning the validity of the second Frazier-Lemke Farm Mortgage Act continued during the year. This act was the successor of the statute which the Supreme Court invalidated in *Louisville Bank v. Radford*, 295 U.S. 555. The question whether the new Act could be sustained, of course, depended upon whether the courts

felt that it could be sufficiently distinguished from the one struck down by the Supreme Court. Only one Circuit Court of Appeals was able to find such distinctions. This was done, and the act was upheld in *Dallas Joint Stock Land Bank v. Davis*, 83 F. (2d) 322. On the other hand, at least three Circuit Courts of Appeals found the new act to be invalid on grounds substantially the same as those which had been invoked against the old. This result was reached by the Seventh Circuit in *In re Lowman*, 79 F. (2d) 887, by the Eighth Circuit in *United States National Bank v. Pamp*, 83 F. (2d) 493, and by the Fourth Circuit in *Wright v. Vinton Branch of the Mountain Trust Bank*, 85 F. (2d) 973.

RECONSTRUCTION FINANCE CORPORATION

Early in the year, in *Baltimore Bank v. State Tax Commission*, 297 U.S. 209, a state tax on shares in national banks owned by the Reconstruction Finance Corporation was held to be valid. This decision, however, turned on the fact that the Court found that Congress had consented to such a tax. There was, therefore, no necessity of deciding the validity of the tax in the absence of consent. Immediately following this decision Congress amended the statute so as to withdraw the consent which the Court had found to exist. The tax status of the Reconstruction Finance Corporation with respect to state taxes, therefore, is still somewhat in doubt.

Although the Reconstruction Finance Corporation has been in existence for more than four years, the Supreme Court has not yet been called upon to determine directly the question of the constitutional power of Congress to create such an agency. Indeed this point had not been definitely decided by any Federal court until near the end of 1936. Then, in *Reconstruction Finance Corporation v. Central Republic Trust Co.*, the district court in Illinois was confronted with a suit seeking to impose a liability on the stockholders of a bank to whom the Corporation had made a loan. One of the de-

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fenses raised was the invalidity of the act creating the Corporation. This defense was not sustained, the court writing a comprehensive opinion affirming the power of Congress to create such an agency.

RESTRAINT OF TRADE

The most important development of the year in the field of the anti-trust laws was the decision of the Supreme Court in *Sugar Institute v. United States*, 297 U.S. 553. The Sugar Institute was found to be an unlawful combination under the Sherman Act, and its dissolution was ordered. An exhaustive opinion was prepared by Chief Justice Hughes which is likely to prove the focal point of thought in the anti-trust field for some time to come.

There were few other proceedings in the restraint-of-trade field. This perhaps should not be surprising in a year which produced the Robinson-Patman Act and other price-maintenance statutes which are difficult to regard as in the interests of consumers. Among the few cases which were decided may be mentioned *Vitagraph, Inc. v. Perelman*, where clauses in contracts between motion picture distributors and exhibitors from showing two full-length films at the same performance were held invalid. In *Foster & Kleiser Co. v. Special Site Sign Co.*, 85 F. (2d) 742, a conspiracy to monopolize the outdoor advertising business was held not to be subject to the Sherman Act since it did not involve interstate commerce. And in *William Filene's Sons Co. v. Fashion Originators Guild of America*, 14 F. Supp. 353, an association of dress manufacturers for the purpose of preventing style piracy was found not to be an unreasonable restraint of trade within the statute.

GOLD

Early in 1935 the Supreme Court, among the first of its decisions concerning New Deal activities, upheld in substance the Government's actions with respect to gold and promises to pay in terms of gold. These decisions promise to be fruit-

ful source of controversy for a long time to come. That they did not settle all the issues respecting gold is plain from the litigation which persisted through 1936. In *Anglo-Continental Treuhand v. St. Louis-Southwestern Railway Co.*, 81 F. (2d) 11, the Second Circuit Court of Appeals held that the gold clause did not reach alternative promises to pay in gold dollars in New York or a specified number of guilders in Amsterdam. The holder of a coupon containing such a promise presented it in Amsterdam, but payment was refused except in dollars or in guilders at the then equivalent of the dollars offered. The holder of the coupon then brought suit in New York for damages for the breach of the contract to pay guilders. As indicated, the court upheld the complainant and ordered a judgment for the value of the promised guilders on the date when their payment was refused. The Supreme Court declined to review this decision.

A somewhat similar problem was presented in other cases involving promises to pay in gold bullion where gold was in substance treated as a commodity rather than as a form of money. In one such case, *Emery Bird Thayer Dry Goods Co. v. Williams*, 15 F. Supp. 938, a district court in Missouri held that the Act of Congress invalidating the gold clause was inapplicable, that the contract in question called for payment in terms of a commodity, and that on breach of the contract the damages should be measured in terms of the value of that commodity.

A substantially contrary result, however, was reached in *Holyoke Water Power Co. v. American Writing Paper Co.*, 83 F. (2d) 398. In this case the rental under a lease was fixed at the amount of gold equivalent to a stated number of dollars at the then standard of weight and fineness. The court held that this was not a commodity contract but was no more than an ordinary clause providing for the payment of dollars in terms of gold. As such it was held to be invalidated by the Act of Congress. A review of this latter de-

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cision was pending before the Supreme Court at the end of the year.

A somewhat different question regarding the validity of the gold legislation was presented in *Dixie Terminal Co. v. United States*, decided by the Court of Claims. This case was a suit brought on the coupon of a Liberty bond after the bond had been called. It was contended that the call was invalid since it offered payment only in depreciated dollars and not in the gold dollars promised by the terms of the bond. Since the call was invalid, it was contended that the bonds remained outstanding and that the liability to pay interest continued unabated. This contention was rejected by the Court of Claims following a similar decision by a district court in Maryland in *Machen v. United States*.

NEW DEAL ECONOMIC AGENCIES

Public Works Administration.—

At the beginning of the year there was pending before the Supreme Court a case involving the power of the Federal Government to condemn property for the purpose of constructing a low-cost housing project. A Circuit Court of Appeals had denied this power, and the Government took the case to the Supreme Court. Just before the argument was reached on the Court's docket, however, the Solicitor General dismissed the case. Although no reason was announced for this action, there seems ground to believe that the dismissal must have been influenced by doubts that the Government could prevail. It may have been felt that on the whole it was better to leave the matter as it stood without invoking a further decision against the Federal power. Of course, this action by the Government resulted in the abandonment of further efforts to obtain property by condemnation in these circumstances.

A closely related problem was presented as to the propriety of loans by the Public Works Administration to municipalities to aid in the construction of municipal public utilities. Such loans were upheld by the Fourth

Circuit Court of Appeals in *Greenwood County v. Duke Power Co.*, 81 F. (2d) 986, and the question was pending in the Supreme Court at the end of the year.

Resettlement Administration.—

The Resettlement Administration has undertaken several projects closely similar to those promoted by the Public Works Administration. It is not surprising, therefore, that similar legal questions should be presented to the courts with respect to each agency. In a case involving a project at Bound Brook, New Jersey, the District of Columbia Court of Appeals, by a closely divided court, held that the Resettlement Administration's activity was unconstitutional, involving an improper delegation of legislative power and an encroachment on the reserved powers of the States, *Township of Franklin v. Tugwell*, 85 F. (2d) 208. The Government concluded not to take this case to the Supreme Court.

Tennessee Valley Authority.—

Although certain aspects of the activities of the Tennessee Valley Authority were upheld by the Supreme Court in *Ashwander v. Tennessee Valley Authority*, 297 U.S. 288, litigation continued in the lower courts with respect to other parts of the Authority's program. The power of the T.V.A. to purchase and exchange electricity was sustained by a district court in *Georgia Power Co. v. Tennessee Valley Authority*, 14 F. Supp. 673. In *Tennessee Electric Power Co. v. Tennessee Valley Authority*, a district court in Tennessee sustained its jurisdiction to entertain a suit against the Authority and the members of its board. The latter case, however, decided purely a procedural question. The court's decision on the merits remains to be seen.

OTHER NEW DEAL STATUTES

Hot Oil Act.—One of the first serious reverses which the New Deal met before the Supreme Court was in a case involving the effort of Congress to prevent the interstate transportation of "hot oil," oil produced contrary to state laws. The statute

FEDERAL PROSECUTIONS AND JUDICIAL DECISIONS

as held invalid because it delegated to the President the power to determine when it should be in effect. Following this decision Congress passed a new statute directly forbidding the transportation of contraband oil without granting any discretion to the President. The validity of this statute was upheld in *Wiswold v. President*, 82 F. (2d) 922.

Munitions Act.—A closely related problem was presented to the courts in *United States v. Curtis-Wright Export Corporation*, 14 F. Supp. 230, which was argued on appeal before the Supreme Court at the end of the year. This case involved the validity of a statute by which Congress sought to empower the President to place an embargo on the sending of munitions to belligerent countries. The district court held that the Supreme Court's decision invalidating the first "hot oil" statute required a similar result here. There seems to be, however, considerable room to contend that Congress may properly make a wider delegation to the President in the field of foreign relations than it may with respect to purely internal matters.

Silver Tax.—In connection with the Silver Purchase Act of 1934 Congress imposed a retroactive tax on gains from transfers in silver which were made before the final enactment of the statute. In *Hudson v. United States*, 12 F. Supp. 620, the Court of Claims held this tax invalid on the ground that Congress could not constitutionally impose a tax on a transaction already finally completed. An argument on appeal from this decision was heard by the Supreme Court late in the year.

Social Security Tax.—In a country in which every new legislative venture almost necessarily raises a serious constitutional question, there could be little surprise that the Social Security legislation of the New Deal should be attacked by many suits in the courts. Although several such proceedings were started, only one was actually determined. In *Davis v. Boston & Maine Railway Co.*, the district court in Massa-

chusetts broadly sustained the validity of the statutes with particular reference to the taxes they imposed. It is expected, of course, that this case will continue for further proceedings in the higher courts.

VETERANS' PREFERENCE

At the beginning of the year a district court in Pennsylvania caused considerable consternation by holding that veterans were entitled to preference in employment on relief projects. This decision, however, was shortly reversed by the Circuit Court of Appeals with the apparently sensible holding that veterans not on relief were not entitled to priority of employment on Federal relief projects, *Gossnell v. Spang*, 84 F. (2d) 889.

SEIZURE OF TELEGRAMS BY SENATE COMMITTEE

An event which attracted considerable public attention during the year was the seizure of large quantities of telegrams by an investigating committee of the Senate, apparently with the aid and cooperation of the Federal Communications Commission. An interesting question in the field of the separation of powers was presented by a law suit brought for the purpose of restraining the committee's use of these telegrams. The Court of Appeals for the District of Columbia, although condemning the seizure, held that it was without power to enter an injunction against a committee of the Senate, *Hearst v. Black*. Whether Senate committees can use such potential power with due restraint remains, however, to be seen.

INTERPLEADER ACT IN INHERITANCE TAX CASES

One of the seemingly insoluble problems in the inheritance tax field of recent years has been the question of determining once and for all the State of the domicile of a person whose estate was being subjected to tax. In the famous *Dorrance* litigation, both Pennsylvania and New Jersey succeeded in collecting a tax of many millions of dollars, although it was plain, as a

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theoretical matter, that Dorrance could have been domiciled in only one State and that that State alone was entitled to the tax. A possible means of resolving questions of this sort appeared in a decision of the district court in Massachusetts in *Worcester County Trust Co. v. Long*, 14 F. Supp. 754. The court in this case held that the Federal Interpleader Act of 1936 provided a means by which the taxing officials of the several States involved might be brought together before a single Federal district court, there to litigate between themselves their respective claims. If this decision survives the scrutiny of appellate courts, it will remove a real source of difficulty in the administration of inheritance tax laws.

CRIMINAL MATTERS

Kidnapping.—The criminal prosecutions commenced by the Federal Government during the year were perhaps less spectacular than those of some preceding years. The Government's campaign against kidnappers had already proved effective in eliminating that evil. The chief decision of the year in this field was in *Gooch v. United States*, 297 U.S. 124, in which the court upheld a capital sentence under the Federal Kidnapping Act for unlawfully seizing an officer and carrying him away to prevent the arrest of his captor.

Prison-made Goods.—In *Whitfield v. Ohio*, 297 U.S. 431, the Supreme Court upheld the validity of the Hawes-Cooper Act which provided that prison-made goods shipped in interstate commerce should be subject to the laws of the State of destination whether in the original package or not. While this case was pending Congress passed the Ashurst-Sumners Act excluding prison-made goods from interstate commerce when intended to be sold in violation of the laws of any State

and requiring all such goods to be labeled to show their prison origin. The latter act was upheld in *Kentucky Whip & Collar Co. v. Illinois Central Railroad*, 84 F. (2d) 168. An appeal from this decision was heard by the Supreme Court at the end of the year.

Firearms Act.—In 1934 Congress passed a statute seeking to use its taxing power for the purpose of limiting and regulating dealings in firearms of the type used by criminals. Since the motive of revenue raising was obviously not the dominant one in the action of Congress, a question existed as to the validity of this statute. This question was resolved in favor of the Government in *Sonzinsky v. United States*, a decision of the Circuit Court of Appeals in Chicago. The analogy of the statute to the similar statutes regulating the sale of narcotics, already upheld by the Supreme Court, was found to be persuasive.

Government Employees on Juries.—For many years, following a decision of the Supreme Court, Government employees have been ineligible to serve on juries in the District of Columbia. Since so large a proportion of the population of the District is in Government employ, it has become increasingly difficult to obtain satisfactory juries for the trial of criminal cases there. To meet this difficulty, Congress in 1935 passed legislation expressly authorizing Government employees to serve as jurors where they showed no other bias. This statute was held unconstitutional by the District Court of Appeals, but its validity was ultimately established by the Supreme Court in *United States v. Wood*. The Court found no basis for a conclusion that Government employees were necessarily improper jurors either in the historical precedents or in the realities of the situation.

FEDERAL CIVIL SERVICE

FEDERAL CIVIL SERVICE

By HARRY B. MITCHELL

PRESIDENT, UNITED STATES CIVIL SERVICE COMMISSION

LEGISLATION

The second session of the 74th Congress continued the action of the first session by extending the provisions of the Civil Service Act and rules to several newly created organizations. With the usual exceptions of certain executive officers, attorneys, and experts, the Congress placed within the civil service system positions in the Rural Electrification Administration, Federal Alcohol Administration, and United States Maritime Commission. A number of higher supervisory positions in the Bureau of Marine Inspection and Navigation were withdrawn from the exempt class and made competitive, and the merit system was also applied to the temporary work of searching census records to supply information needed under the Social Security Act.

Among the exemptions from civil service standards passed by the Congress at its second session were employments connected with much of the administration of the Civilian Conservation Corps Camps. The positions in such camps coming under the Soil Conservation Service of the Department of Agriculture and also the junior assistants to technician in the general administration of the camps had been brought within the competitive service by prior action, and Congress did not disturb their status.

Other groups of exceptions were temporary employees of the General Accounting office engaged particularly in the auditing of the expenditures and accounts of emergency agencies, additional employees in the Conciliation Office of the Department of Labor, and a large number of positions in the Reclamation Service in projects which had theretofore been financed out of special allotments of public works funds.

The provisions of the Civil Service Retirement Act were extended to

the investigating staff of the Bureau of Investigations of the Department of Justice, and a special statute was enacted granting retirement privileges to employees of the Alaska Railroad system.

The annual and sick leave privileges of Federal employees were changed by two statutes approved March 14, 1936. Annual leave with pay, which for many years had been 30 days and later changed to 15 days during the period of economy legislation, was placed at 26 days with a cumulative provision up to a total of 60 days. The annual leave statute also directed that each head of a Federal department or agency promulgate the hours of duty to be observed by the different groups or classes of employees in his organization in order that monthly reports could be made to the Civil Service Commission of the overtime performed for the period from July 1 to Jan. 1 for report to Congress in January, 1937. Sick leave was reduced in a separate statute from 30 days to 15 days per annum, but there was added a cumulative feature up to a total of 90 days which had not theretofore been a part of the general law governing sick leave. Both these statutes changed the status of leave from a privilege to a right, the only discretion granted appointing officers with respect to annual leave having to do with the period or time within which leave may be granted.

EXECUTIVE ACTION

The President, by Executive Order of Nov. 9, 1935, placed positions of junior assistant to technician in the administration of the CCC camps within the provisions of the competitive classified service; and by Executive Order of Nov. 18, 1935, he took similar action with respect to positions of officers and employees of the National Training School for Boys.

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The most important Executive Order from the standpoint of the merit system issued during the year was that of July 20, 1936, directing not only the application of the provisions of the Civil Service Act and rules as far as applicable to examinations for positions of first, second, and third class postmaster, but also directing that only the name of the highest qualified eligible be submitted for consideration through the Post Office Department to the President. Positions of first, second, and third class postmasters are filled by appointment by the President with confirmation by the Senate, and it will require legislation to withdraw such positions from the exempt class. The purpose of the order was to have merit principles applied in connection with the consideration of candidates by the President before nomination to the Senate.

The President in letters of Aug. 25, 1936 to the President of the Civil Service Commission and to the Chairman of the Federal Home Loan Bank Board and its subsidiaries, expressed the desire that civil service standards and policies in personnel administration be applied to the Home Owners Loan Corporation.

In October the President directed that the civil service rules hereafter be observed in making reductions in force by the permanent emergency agencies even though the agencies are not ordinarily subject to the rules. Especial attention was called in this connection to the requirement that preference in retention is to be given to persons entitled to military preference if their records are good.

Two important amendments of the Civil Service rules were approved by the President during the year. The first of these amended the reinstatement rule to require that a person to be eligible for reinstatement must

have acquired a regular civil service status before he had been separated from the service. The former practice had permitted reinstatement with a civil service standing to an employee who had been separated from a position before the position had been brought within the classified service.

The second amendment strengthened the procedure required in connection with the status of incumbents of positions at the time such positions are brought within the competitive classified service either by legislation or Executive Order. Prior to this amendment the classification of incumbent employees was practically automatic. The amendment directed that a person to acquire a classified status at the time the position was classified must have been appointed at least 60 days prior to the effective date of the change in the status of the position, must be unqualifiedly recommended to the Civil Service Commission by the head of the department or establishment in which employed, must pass an appropriate noncompetitive test prescribed by the Commission, and must be a citizen of the United States and not otherwise disqualified.

GROWTH OF FEDERAL EXECUTIVE CIVIL SERVICE

The changes in the number of employees in the Federal executive civil service during the last 16 years is shown by the following table divided into four-year periods. During the fiscal year ended June 30, 1936, 43,496 positions were added to the competitive classified service, which brought more positions within the jurisdiction of the merit system than in any other year except the fiscal years 1918 and 1919 during the period of the World War.

	June 30, 1920	June 30, 1924	June 30, 1928	June 30, 1932	June 30, 1936
Competitive Classified Positions	497,603	415,593	431,763	467,161	498,725
Unclassified and Exempt Positions	193,513	105,048	109,104	116,035	325,534
Total	691,116	521,641	540,867	583,196	824,259

FEDERAL CIVIL SERVICE

THE MERIT SYSTEM IN THE STATES

Alabama.—In a 5 to 2 decision the Alabama Supreme Court held that the civil service law of Jefferson County, Ala., was constitutional in its entirety. At a previous hearing the civil service act had also been upheld. The two large cities of Birmingham and Bessemer which are both located in this county, are subject to the provisions of the law.

Arkansas.—Carl E. Bailey, the Democratic nominee for governor, appointed an honorary civil service commission to prepare a merit system law for the State. The facilities of the State Planning Board, including its staff members, have been made available to the honorary commission. This action by Governor Bailey, who was elected in November, has received the praise of the newspapers throughout the State.

California.—The Civil Service Commission of San Francisco at the direction of the Mayor conducted a survey of the municipal departments with a view to eliminating overlapping of functions, obsolete and unnecessary practices, and establishing sound business administration. Southgate, Los Angeles County, voted to place practically all city employees under the merit system.

Florida.—Less than one per cent of the municipal positions in Jacksonville are outside the civil service system. On Nov. 10 the State Merit System Committee for Florida held written examinations in Jacksonville for appointments with the State and District Welfare Boards.

Iowa.—Grinnell voted to place positions in the police and fire departments under a civil service system.

Kentucky.—Under a state reorganization law a Division of Personnel Efficiency was created, which is charged with the responsibility for installing and administering a merit system in the state service. The Director of the Division is to report to the Commissioner of Finance, an appointee of the Governor. All recruiting functions, authorizing and

certifying to state pay rolls, installing and administering the compensation classification plan, developing training programs, making regulations as to conditions of employment, etc., are under the jurisdiction of the Director.

Michigan.—Dearborn toward the end of 1935 voted 2 to 1 to establish a civil service commission to apply the merit system to the entire municipal service. Muskegon in 1936 voted similar action. Adrian, Ypsilanti, Highland Park, and Wyandotte voted to hire firemen through civil service examination. Governor Fitzgerald appointed a Michigan civil service study commission with James K. Pollock, professor of Political Science at the University of Michigan, as chairman, for the purpose of studying the public administration of the State. Extensive hearings were conducted, and careful studies and surveys made concerning various phases of public administration. The Commission recommended the establishment of a state merit system which the Governor approved for submission to the legislature.

Minnesota.—The cities of Ely and Crookston voted to apply the competitive examination system to their respective police departments.

New Jersey.—Camden County and the city of Rahway by formal vote decided to come under the state civil service law. This means that the State Civil Service Commission will hold examinations for these two communities.

Ohio.—The State Civil Service Commission extended the merit system to county governments within the State, thereby making at least 10,000 positions subject to competitive examinations.

The Ohio State Supreme Court handed down a decision of far-reaching importance. The Auditor of Hamilton County had sought to evade the civil service law by appointing to clerical positions without regard to the civil service lists by using the title of "deputy." The Sheriff of Hamilton County also sought to evade civil service require-

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ments by designating as "deputies" persons employed in such positions as jail guard, clerk, etc. The civil service law of Ohio permits the exemption from civil service requirements of all persons who are appointed as "deputies" by such officers as County Auditor and County Sheriff. The State Civil Service Commission, in the presentation of the case to the court, charged these two public officials had deliberately attempted to evade the law by using the designation of "deputies." The court ruled that the indiscriminate appointment of persons to various classes of positions and giving them the designation of "deputy" circumvented the civil service law. The court stated in part: "Patently it could not logically be urged that one employed as a typist thereby becomes empowered to 'perform all and singular the duties of his principal,' who is a County Auditor; nor can it properly be said that one employed as a bookkeeping machine operator is thereby 'invested with all the power and authority of the principal'; and it is equally clear that a person employed by a Sheriff to guard prisoners or to patrol roads does not thereby acquire 'the power to do everything which his principal may do'."

In this decision the court distinguished between the term "deputy" as used in a popular sense, as one who is to perform some part of the official's duties, and its legal sense, where the term is more rigidly defined as one acting generally for and in place of his principal. The court held that in a legal sense the term "deputy" must be more rigidly defined than in the popular sense. The court further held that the State Civil Service Commission could maintain a mandamus proceeding to compel public officials to comply with the civil service law.

Oregon.—Astoria, Albany, Baker, Bend, Eugene, LaGrande, Medford, and Pendleton voted to apply civil service principles to the employment of firemen.

Texas.—The city of Waco voted

late in 1935 to establish a municipal civil service commission.

Virginia.—The legislature appropriated \$17,000 for a personnel study of the State preliminary to the possible adoption of a state civil service law. Henrico County, which includes the city of Richmond, is under a merit system of employment adopted by the County Board of Supervisors. A resolution of the Board also calls for the development of a system of service ratings, a compensation classification plan, and for the protection of career employees through a provision that dismissals may be made only for unsatisfactory service.

PUBLIC OPINION ON THE MERIT SYSTEM

The year saw the development of interest in the business administration of Government to a higher level than that of any year since the period immediately preceding the passage of the Federal Civil Service Act in 1883. This is attested by the fact that numerous public organizations made the cause of the merit system a part of their programs and of their conferences and meetings during the year.

The American Institute of Public Opinion, Dr. George Gallup, director, conducted a poll of approximately 100,000 Americans from all walks of life and all sections of the country to ascertain whether public opinion favors the civil service or the spoils system. The Institute employed 204 interviewers to supplement the use of the mails in order to secure an adequate number and a representative sampling of citizens. Eighty-eight per cent of those voting favored civil service, voters in every State in the Union giving huge majorities in support of the merit system. In this poll the division by parties showed that 83 per cent of the Democrats, 91 per cent of the Republicans, and 93 per cent of the Socialists favored civil service. It was especially noteworthy that in the States which have been under a civil service system the percentage in favor of such a system was consistently higher than in the

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states that did not have a civil service law.

Although in 1932 the platform adopted by the Democratic National Convention did not contain a civil service plank, the platform for 1936 places the party in favor of the merit system. The Democratic plank states: "For the protection of government itself and promotion of its efficiency we pledge the immediate extension of the merit system through the classified civil service—which was first established and fostered under Democratic auspices—to all non-policymaking positions in the Federal service."

"We shall subject to the Civil Service Law all continuing positions which, because of the emergency, have been exempt from its operation."

The Republican National Convention adopted the following plank: "Under the New Deal, official authority has been given to inexperienced and incompetent persons. The civil service has been sacrificed to create a national political machine. As a result, the Federal Government has never presented such a picture of confusion and inefficiency."

"We pledge ourselves to the merit system, virtually destroyed by New Deal spoilsmen. It should be reformed, improved and extended."

"We will provide such conditions as for an attractive permanent career Government service to young men and women of ability, irrespective of party affiliations."

An amendment to the Federal Constitution was proposed by the National Civil Service Reform League and seems assured of strong support.

It reads: "Appointments and promotions in the civil service of the United States shall be made according to merit and fitness, to be ascertained, so far as practicable, by examinations, which so far as practicable, shall be competitive."

The National League of Women Voters conducted a campaign during the year and proposes to continue such campaign to have trained personnel employed in the public service. This organization has used the effective slogan, "Find the man for the job, not the job for the man."

Many organizations, both nationally and in local conventions, have given special consideration to the necessity for having expert and well-qualified personnel in public service, whether Federal, State, county, or municipal. Among these organizations, are numerous unions, the American Legion, and other veterans' organizations, the American Political Science Association, the International City Managers' Association, the Municipal League, and the National Civil Service Reform League. At a symposium in Philadelphia of the American Academy of Political and Social Science all the speakers urged adoption of the civil service system for all public employment.

The Chief Investigator of the Office of State's Attorney, Cook County, Illinois, stated that automobile thefts were reduced from 96 a day to nine a day in Cook County, Illinois, since the elimination of patronage in the office of State's Attorney. The Chief Investigator stated that this remarkable achievement, with its large savings to the public, could not have been accomplished without the elimination of spoils politics in the selection of personnel.

A committee of the United States Senate in its preliminary report as to the cause for the airplane accident which resulted in the death of Senator Bronson Cutting of New Mexico charged inefficiency in the administration of the Bureau of Air Commerce, Department of Commerce, and stated that all employees of the Bureau should be placed under the civil service system.

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CHRONOLOGY OF THE NATIONAL GOVERNMENT AFTER ADJOURNMENT OF CONGRESS

(From *The New York Times*, January 4, 1937)

AGRICULTURE

June 22—The President ordered a survey to speed relief in the Western drought area.

June 27—Secretary Wallace named a committee to coordinate drought relief efforts.

July 6—The President took charge of drought aid as conditions West became worse.

July 8—Secretary Wallace announced that drought cattle purchases might total \$30,000,000.

July 9—Resettlement Administration declared a one-year moratorium on rural rehabilitation loans to between 25,000 and 30,000 farmers; WPA extended its emergency job program to care for 20,000 drought sufferers in seven Southern States.

July 17—AAA decided to purchase and process 2,000,000 bushels of wheat for drought sufferers.

July 22—The President set up the Great Plains Drought Area Committee for a long-range program.

Aug. 3—WPA drought aid ordered for 26,500 more in Colorado, Kansas, Kentucky and Nebraska bring the total to 89,000 farmers; cattle buying began.

Aug. 18—Drought developments forced the AAA to adopt a sheep-buying plan; Secretary Wallace charged that the Republicans planned to destroy the AAA.

Aug. 19—The President at Hyde Park conferred with WPA Director Hopkins and others on drought relief and approved an increase in the number of WPA subsistence jobs from the current figure of 90,000 to minimum of 120,000 or a maximum of 150,000.

Aug. 20—The President, in conference with L. J. Taber of the National Grange, promised a post-election study of crop insurance.

Aug. 24—Secretary Wallace planned seed corn loans in the drought region.

Aug. 25—Federal Judge Barnes at

Chicago held the Commodity Exchange Act valid.

Aug. 28—The Agricultural Department announced that farmers' cash income in July was the highest since 1929.

Sept. 13—The Commodity Exchange Act went into effect.

Sept. 16—Secretary Wallace announced that \$10,000,000 would be allotted to enable farmers to buy seed corn to insure 1937 plantings in drought areas.

Sept. 18—The President, seeking a long-term farm program, appointed two committees to study and report on the twin problems of crop insurance for farmers and the improvement of land use in the Great Plains States.

Sept. 22—Upstream Engineering Conference, called by Secretary Wallace with approval of the President, advocated a program for erosion control and soil and water conservation in the upper limits of watersheds where floods are born.

Oct. 9—The Commodity Exchange Administration issued regulations hitting "matching" orders in commodity futures.

Nov. 14—Rexford J. Tugwell, head of RA, advocated a far-reaching program to enable tenants to buy farms, calling for expenditure of \$500,000,000 in ten years; Secretary Wallace told National Grange he was working on a "1937 model AAA."

Nov. 17—Mr. Tugwell resigned as Under-Secretary of Agriculture and Director of RA, effective Jan. 1, 1937, to join the American Molasses Company; the President ordered the AAA to study the farm tenant problem.

Dec. 15—Secretary Wallace, in his annual report, insisted that production control must have a place with soil conservation and consumer protection in any permanent agricultural policy; warned that the

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present soil conservation program was inadequate to prevent the accumulation of excessive surpluses and that one year of normal weather might re-create the overproduction of 1933.

Dec. 16—Secretary Wallace, in an address to the President's special committee on farm tenancy, opposed large annual appropriations and vigorous programs for ridding America of its farm tenancy problem; without naming Tugwell, he asserted that a "mere purchase and sale plan" is not enough.

Dec. 18—The government's Crop Reporting Board, in final summary of 1936 production, announced that the shortest supplies of farm products of any recent year except 1934, selling at the highest average prices since 1929, had combined this year to carry gross farm income to the highest point in six years, a total of \$9,530,000,000.

Dec. 21—The Department of Agriculture Crop Reporting Board estimated that farmers had planted 57,187,000 acres of Winter wheat this Fall—the largest on record—and estimated a Winter wheat crop of slightly more than 600,000,000 bushels next year.

Dec. 23—The President's Committee on Crop Insurance recommended Congressional action to insure the nation's wheat farmers against losses in yield resulting from drought; urged that the crop insurance plan be applied to the 1938 crop.

ARMY

June 25—The President signed the bill authorizing a maximum strength of 2,320 airplanes for the army.

July 1—The Army Air Corps mapped plans for a 1,000-plane base in Alaska.

Aug. 23—War Department opposed the nationalization of munitions factories.

Aug. 27—Secretary of War Dern died at Walter Reed Hospital.

Sept. 25—Harry H. Woodring, Assistant Secretary of War, appointed Secretary of War "temporarily."

Nov. 8—General Malin Craig, chief of staff, in annual report recommended the creation of a large enlisted reserve force to offset the aging of World War veterans; asserted that the lack of modern equipment was being remedied.

Nov. 13—Major General Edward M. Markham, chief of army engineers, in a report to the House, approved plans for a seaplane base in the harbor at Midway Island, 1,200 miles West of Hawaii.

Nov. 17—Florida Canal project approved in advisory report by army engineers.

Nov. 18—Secretary Woodring announced decision to organize a quick-striking motorized infantry division of 13,000 men.

Dec. 10—War Department announced that plans for a great industrial mobilization machine, directed by the President and a War Resources Administration, would be laid before Congress.

Dec. 20—Secretary Woodring, in annual report, recommended a permanent peacetime army of 165,000 men and 14,000 officers, also a greatly enlarged National Guard and officer reserve strength; declared that in light of present world conditions the United States could not neglect measures for national safety.

AVIATION

June 27—The government reached a settlement on more than half the suits brought by airmail lines whose contracts were canceled in February, 1934.

Nov. 28—Administrator Hopkins reported that the WPA airport program was half done.

Dec. 2—A Commerce Department special committee urged it to cooperate with the Maritime Commission so that the Maritime Act of 1936 might be applied to airships.

BANKING

June 8—The President, in letter addressed to all banks and distributed through the Federal Reserve System, urged bankers to cooperate

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with the government in cashing bonus checks promptly and in full.

June 26—The Federal Reserve Board modified its stock-loan rules to facilitate loans between banks and brokers.

July 24—The Federal Reserve Board ordered survey to help the twelve Federal Reserve banks pay normal dividends without dipping into their surplus funds.

Aug. 3—Chairman Crowley in report for ten months ended June 30 asserted that the Federal Deposit Insurance Corporation had made good deposits of \$9,943,085 held by the public in banks which failed.

Sept. 15—Chairman Crowley of the FDIC asserted that the banking structure of the country was in its strongest position for the past several years; that Federal deposit insurance had restored the confidence of depositors in banks, and that capital aid by the RFC, as well as rising values and improved earnings had enabled banks to absorb accumulated losses.

Nov. 9—Chairman Crowley of FDIC, in annual report, intimated the desirability of a central chartering authority for all insured banks.

Dec. 10—Chairman Crowley announced that deposits of \$45,188,000,000 in 14,085 of the 14,092 commercial banks affiliated with the FDIC were 43 per cent insured as of May 13 last.

BUDGET

July 1—Secretary Morgenthau reported Federal revenue rising and expenses falling; that the fiscal year closed with a deficit of \$4,400,000,000, or \$2,700,000,000 after making the \$1,700,000,000 payment to veterans; and that the public debt was \$33,750,000,000.

Sept. 1—Gross Federal deficit of \$2,096,996,300 for the fiscal year 1936-37, or nearly \$1,000,000,000 more than was forecast in January but still the lowest thus far under the New Deal, was predicted in the budget summation issued from the Treasury in the form of a statement by the President.

Sept. 3—Secretary Morgenthau an-

nounced that the Treasury would maintain a working cash balance of around \$1,000,000,000.

Oct. 19—Secretary Morgenthau, replying to the charges made in former President Hoover's speech of Oct. 16, asserted that the government had no "double" budget or system of "double" bookkeeping.

Oct. 26—Secretary Wallace predicted a sufficient national income "within a year or two" to balance the Federal budget, provided the administration in power had "courage enough to collect a fair share from the taxpayers according to their ability to pay."

Dec. 6—The Treasury announced a new financing operation totaling \$1,486,651,900, cutting the interest rate to 2½ per cent, a long-term low.

Dec. 10—The Treasury received \$5,100,000,000 in cash offers for its offering of \$700,000,000 2½ per cent thirteen-seventeen year bonds.

Dec. 13—The Treasury put the public debt at \$34,232,200,000 following the completion of this calendar year's refinancing.

CCC

Oct. 28—The President planned to recommend continuance of the Civilian Conservation Corps.

Dec. 13—Robert Fechner, director of the CCC program, in his annual report to the President, recommended that it be continued as "an effective part of our national policy."

Dec. 14—Director Fechner, after a conference with the President, said that the President would propose legislation to finance a "permanent" CCC of 300,000 to 350,000 men.

CIVIL SERVICE

July 22—The President ordered all postmasters placed under the merit system.

Sept. 4—The President extended the merit system to the HOLC.

Nov. 2—The Civil Service Commission announced that employees in the Federal civil establishment

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reached a total of 835,704 at the end of September.

COMMUNICATIONS

Sept. 10—The Federal Communications Commission ordered an investigation of long-distance telephone rates.

Dec. 2—The FCC announced that reductions had been arranged in interstate long-distance telephone rates by the A. T. & T. Company. Amounting to \$12,000,000 annually, they will be effective Jan. 15.

DOMESTIC TRADE

June 20—The President signed the Robinson-Patman Chain Store Bill.

June 30—He signed the Walsh-Healy Government Contracts Bill.

Oct. 1—The Federal Trade Commission accused New York milk companies of manipulation.

Oct. 2—The Federal Trade Commission began enforcement of the Robinson-Patman act by issuing complaints against five companies.

Oct. 13—The commission issued a complaint against the General Electric, Westinghouse and seven other concerns alleging collusive bidding and fixing and maintenance of uniform prices in connection with manufacture and sale of turbine generators and condensers.

Oct. 16—The commission set rules for the tire industry; barred price differentials and rebates to cut competition.

Oct. 17—The commission issued a complaint against five trade associations of jobbers of auto parts and accessories, charging them with forming a combination to control the market and fix and maintain resale prices.

Nov. 7—Secretary Perkins announced that nearly \$21,000,000 worth of contracts incorporating the Walsh-Healey act labor provisions were awarded by the government in October.

Dec. 3—The Federal Trade Commission accused twenty-one auto concerns of misleading on interest rates charged purchasers under deferred payment plans.

Dec. 13—The commission reported

that the death of the NRA had greatly increased its activities.

FLOOD AID

July 13—The President at Hyde Park pledged flood control aid; he promised a delegation he would tour Eastern zones and speed preliminaries.

Aug. 14—The WPA allotted \$4,288,377 for flood control projects in Pennsylvania, Maine, Massachusetts and West Virginia.

Aug. 25—The War Department allocated \$11,981,964 for flood control work.

FOREIGN TRADE

June 29—President Roosevelt directed that the benefits of lower United States tariff duties flowing from reciprocal trade agreements be withdrawn from Australia on Aug. 1 because of discrimination against American commerce in Australia's new import licensing system.

July 11—The United States imposed retaliatory duties on German imports in reply to Reich subsidies for some exported articles.

July 17—Secretary Hull denounced "false" criticism of the reciprocal trade pacts.

Aug. 14—The United States reduced duties on Reich imports and lifted countervailing tariffs after Germany abrogated subsidies on her exports.

Oct. 4—The balance of international payments, made public by the Bureau of Foreign and Domestic Commerce, disclosed that the United States imported more merchandise than it exported in the first half of 1936, for the first such period in ten years.

Oct. 7—Secretary Hull in a Minneapolis speech declared that the reciprocal trade pacts had rebuilt trade; he pointed to the rise in farm exports.

Nov. 4—The United States suggested, in a note to the Australian Government, that improved economic conditions should permit the latter to abandon its discriminations against American products.

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Nov. 10—The President ordered a new policy for the export of military airplanes, providing that foreign countries that buy fighting planes in this country of types manufactured for the United States armed forces, and embodying secret military devices, would encounter delays of about two years in deliveries.

Dec. 15—Secretary Wallace in his annual report praised the reciprocal trade pacts, but suggested that more of them should be made with industrial nations.

Dec. 16—The United States and Italy agreed to end their commercial treaty of 1871; preparations were being made for one covering modern developments.

GOVERNMENT REORGANIZATION

June 29—John R. McCarl, on the eve of retirement as Controller General, urged a systematic reorganization of the government.

July 26—Special committee of the American Bar Association advocated establishment of a Federal administrative court to permit segregation of, and uniform decisions upon, 276 classes of semi-judicial cases, now ruled upon by seventy-three Federal agencies under delegation of power by Congress to Federal executive branches.

Sept. 8—The President was revealed to be planning a wide governmental reorganization.

Dec. 22—Revealed that the President was drafting a drastic realignment of Federal independent agencies and quasi-judicial commissions to fit them into the executive departments headed by Cabinet officers, as part of the plan for reorganizing the Federal Government.

HOUSING

June 20—Secretary Ickes asserted that the government must go ahead with its housing program to help the lowest-income group because private initiative, unable to get profits from decent housing for one-third of the country's population,

had done nothing to improve conditions.

June 25—The President expressed confidence that "we will be able to get a good housing bill" through Congress this Winter.

July 11—Senator Wagner sailed for Europe to study housing programs in Ireland and England to aid him in writing another housing bill.

Aug. 7—He returned with high praise for the housing programs of England and Ireland and predicted that his housing bill would be passed during the coming session.

Aug. 16—The American Federation of Labor held that 1,320,000 homes should be built annually for the next decade; a PWA advisory board reported in favor of a long-term housing program, with government aid for low-income projects at rentals not exceeding \$6 a room a month, including heat, water and light.

Oct. 3—Stewart McDonald, Federal Housing Administrator, declared that the American housing program was "sounder" than England's and that it was "actually ten years ahead of England in this field."

Oct. 17—The executive council of the United States Building and Loan League recommended that the question of public housing be divorced from the unemployment problem and that government ownership and management be curtailed as part of a nine-point program to reorient Federal Government activities.

LABOR

June 30—The American Federation of Labor cited ten unions in the Committee for Industrial Organization as aiming to set up a rival federation.

July 2—The C.I.O. unions defied the A. F. of L. citation.

July 6—John L. Lewis, in a radio hook-up, opened a drive to unionize the steel industry.

July 11—The President avoided intervention in the A. F. of L. dispute with the C. I. O.

July 21—Twelve C. I. O. unions, in a letter to President Green of the

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A. F. of L., challenged the right of the latter's executive council to suspend the union insurgents.

Aug. 5—The A. F. of L. Council voted suspension of ten C. I. O. unions.

Sept. 5—Ten international C. I. O. unions were read out of the A. F. of L.

Sept. 23—Some strike-breakers told the Senate Civil Liberties Committee that they had been hired to incite violence.

Nov. 6—The steel industry announced a wage increase amounting to \$75,000,000 a year to 500,000 employees.

Nov. 9—The President promised the National Conference on Labor Legislation that he would aid in raising labor standards.

Nov. 11—The National Conference on Labor Legislation declared in favor of Federal and State minimum wage laws, the 40-hour week, and favored a constitutional amendment to permit effective minimum wage legislation.

Nov. 12—Secretary Perkins agreed to study the new steel wage pact and the question whether workers' representatives might sign it legally; she received leaders' protests that workers were being coerced into accepting the living cost formula as a basis for wages.

Nov. 13—The President expressed opposition to tying wage rates to the cost-of-living index; Secretary Perkins ruled that employe representatives of workers in plants of the Carnegie-Illinois Steel Company were without authority to sign and bind their fellow-workers to the wage-scale agreement proposed by the corporation; the government invited the world textile powers to an international labor policy at Washington next April.

Nov. 18—The A. F. of L., in annual convention at Tampa, voted condemnation of the insurgent strike of Atlantic Coast seamen.

Nov. 23—The A. F. of L. approved the suspension of ten C. I. O. unions having about 1,000,000 membership.

Nov. 27—The A. F. of L. advocated

the enactment of a 30-hour law and re-elected William Green as its president for another year.

Nov. 29—The A. F. of L. demanded large wage rises on a recurring basis.

Dec. 18—John L. Lewis, chairman of the C. I. O., spurred the United Automobile Workers to test its strength with a demand for a collective bargaining agreement with the General Motors Company.

Dec. 22—Federal Circuit Court of Appeals at New Orleans upheld the authority of the National Labor Relations Board on collective bargaining authority.

Dec. 23—Secretary Perkins sent telegrams urging striking seamen and shipowners on the Pacific Coast to end the ship strike "by the quickest and simplest formula" in the public interest.

Dec. 29—The President declared in favor of action to end starvation wages, long hours and child labor.

LIQUOR

June 26—The President signed the new act creating a permanent independent agency to administer liquor regulations.

Aug. 18—Great Britain protested seizure of a liquor ship off the New Hampshire coast by the Coast Guard.

MONETARY

July 14—Reserve requirements of member banks in the Federal Reserve System were increased 50 per cent to bar credit inflation.

Aug. 5—Marriner S. Eccles, chairman of the Federal Reserve Board, outlined the credit situation to the President at Hyde Park.

Sept. 25—Secretary Morgenthau announced that the United States, after consulting with the British and French Governments, had joined in a tripartite monetary agreement for linking the franc, the pound and the dollar on a stable basis of exchange.

Oct. 12—The Treasury announced that the United States, Great Britain and France had entered into reciprocal arrangements for the

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purchase and sale of gold through their respective stabilization countries to reduce further fluctuation of leading international currencies.

Nov. 12—Mr. Eccles, after a conference with the President, asserted that neither banks nor broker credit had been supporting the uptrend in the stock markets; he attributed the rise to foreign buying.

Nov. 13—The President began an inquiry into alien funds in the American market; ordered the SEC and the Federal Reserve Board to protect exchange rates and domestic markets from possible demoralizing effects in the event that foreign investors, who had poured \$7,000,000,000 into the United States, should decide upon sudden withdrawal of large sums.

Nov. 16—Secretary Morgenthau asserted that the world economic situation demanded the extension by Congress of the powers granted the President to devalue the dollar and also required the maintenance of the \$2,000,000,000 gold stabilization fund.

Nov. 16—The Court of Claims unanimously rejected the suit of Robert A. Taft to compel the United States to pay him \$1.07 interest on a gold Liberty bond; potentially affected by the litigation were about \$8,849,500,000 of gold-clause bonds.

Nov. 23—The Netherlands and Switzerland joined the American-Anglo-Franco tripartite monetary accord.

Nov. 26—The Treasury announced that net capital movements into the United States in 1935 and the first nine months of 1936 amounted to \$2,281,659,000.

Dec. 8—Treasury revealed that money in circulation was \$6,465,726,394, the largest for normal times.

Dec. 13—The Federal Reserve bulletin hinted a rise in reserve bank requirements after Jan. 1.

Dec. 21—Secretary Morgenthau announced a new policy under which the Treasury would buy outright and "sterilize" new money and imported gold and not allow it to

become a basis for new bank credits through the Federal Reserve System, thereby stemming the flow of such gold into bank credits.

NAVAL

July 1—The department favored the installation of 16-inch guns on any new capital ships that might be constructed.

July 14—John S. Farnsworth, former lieutenant commander, was arrested on a charge of selling confidential papers to an agent of the Japanese Government; he pleaded not guilty.

July 29—Admiral Standley, Chief of Naval Operations, stated that the United States planned to build two new superdreadnaughts.

Aug. 19—Bids for construction of six destroyers and three submarines were opened.

Aug. 25—The department awarded contracts for building six 1,500-ton destroyers and three 1,300-ton submarines; allocated to government navy yards the construction for additional destroyers and two submarines.

Sept. 2—The United States notified Great Britain that the former would retain 40,000 tons of overage destroyers under the "escalator clause" of the London naval treaty.

Sept. 16—Recreation of the European Squadron of four ships after a lapse of seven years, mainly to protect Americans in emergency, was ordered.

Oct. 7—Great Britain was revealed as having proposed to the United States and Japan a renewal of Article XIX of the Washington Naval Limitation Treaty of 1922, which provided against increasing fortifications and naval bases in the Pacific.

Nov. 7—Secretary Swanson, in his annual report, urged that the navy build up an adequate fleet of auxiliaries and Federal support for the merchant marine as a second line of defense; warned that moves to safeguard the fleet oil supply were imperative.

Nov. 8—Rear Admiral Andrews, Chief of Navigation, in his report

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- recommended an increase of officers and men to man treaty ships being commissioned; he revealed that crews were now 85 per cent filled.
- Nov. 10**—Rear Admiral William D. Leahy was named Chief of Naval Operations, effective Jan. 1, when Admiral Standley was to retire.
- Nov. 17**—Charles Edison was appointed Assistant Secretary of the Navy.
- Nov. 30**—Plans for two superdreadnaughts to cost \$50,000,000 each, under authority given by the last Congress, were completed.
- Dec. 18**—Plans for construction of one or two \$50,000,000 superdreadnaughts were discussed by the President in the first Cabinet meeting since his return from South America.
- Dec. 24**—The United States notified Japan of intention to retain 1,900 tons of destroyers due to be scrapped under the 1930 London Naval Treaty because of Britain's retention in service of five cruisers.
- Dec. 31**—The Washington and London naval limitation treaties, denounced by Japan, expired.
- POSTAL**
- June 29**—James A. Farley resigned as Postmaster General to conduct the President's campaign for reelection and William W. Howes, First Assistant Postmaster General, was designated as acting head of the department.
- July 7**—The President rejected Mr. Farley's offer of resignation and granted him a leave of absence from Aug. 1 until after the election.
- POWER**
- Aug. 17**—The Federal Power Commission allowed non-profit utilities to merge.
- Sept. 5**—The fight on the constitutionality of the TVA Act went to the Supreme Court of the United States.
- Sept. 8**—Utilities financing was attacked and defended at the Third World Power Conference at Washington.
- Sept. 18**—The President called a conference of governmental power experts and prominent representatives of private operators to discuss the possibility of pooling public and private operations in the Southeast, where the TVA is functioning.
- Sept. 30**—Power heads conferred with the President at the White House on a plan for pooling public and private electrical resources to obtain greater economy and quicker expansion.
- Oct. 4**—The Federal Power Commission announced a plan for cooperative procedure with State utilities commissions in the consideration of rate structures, costs, accounts, regulations and similar questions.
- Nov. 11**—The President and Dr. Arthur E. Morgan, chairman of the TVA, conferred on plans for major legislation to integrate the power program of the government and prevent possible conflict in various developments.
- Nov. 12**—Clyde L. Seavey, member of the Federal Power Commission, criticized the stand of the Supreme Court of the United States on utilities; called its system of valuation too expensive.
- Dec. 14**—Federal Judge Gore granted to nineteen utilities a temporary injunction imposing limitations on expansion and extensions of power facilities of the TVA pending disposal of their suit attacking the constitutionality of the TVA Act.
- Dec. 22**—Federal Judge Gore signed a decree of Knoxville temporarily enjoining the TVA from constructing new transmission lines and substations not already begun and from servicing new power customers except in circumscribed areas.
- Dec. 25**—The Roosevelt administration, in conjunction with the Power Authority of New York, began a frontal drive against major public utility combinations to win ratification of the St. Lawrence seaway-hydroelectric treaty with Canada at the coming session of Congress.

III. THE NATIONAL GOVERNMENT

PUBLIC WORKS

July 10—President Roosevelt, after studying revised plans for PWA projects designed to lighten the burden on relief rolls, announced that he hoped to have the new program in full swing by Fall; explained that the \$1,425,000,000 granted by Congress would not cover all relief needs and that projects had been revised to obtain the utmost in wages out of the \$300,000,000 remaining in the revolving fund for the PWA held by the RFC.

July 15—The President ordered a re-survey of proposed PWA projects, halting about \$80,000,000 in proposed works to ascertain if these were justified as relief expenditures.

Aug. 18—Main PWA program is held up for clarification of policy.

RAILROADS

June 26—Justice Bailey in District of Columbia Supreme Court declared unconstitutional the companion law to the Railroad Retirement Act of 1935 providing for taxes to finance railway pensions.

July 27—The Class 1 railroads requested the Interstate Commerce Commission to make the emergency freight rates, due to expire Dec. 31, permanent.

Aug. 3—Interstate Commerce Commission ruled the emergency freight rates would not be made permanent.

Sept. 13—The Railroad Retirement Board announced that, with the approval of the Controller General, procedure had been devised for preservation of rights under the Railroad Retirement Act of more than 50,000 rail employes whose retirement pay and status had been jeopardized.

Oct. 1—The railroads announced plans for a general adjustment of freight rate structure to maintain an estimated \$100,000,000 of freight revenues threatened by prospective expiration of emergency surcharges Dec. 31.

Oct. 8—The Interstate Commerce Commission, vigorously denouncing holding company control of one

company by another, refused permission to the Pennsylvania Railroad to purchase an Ohio trucking concern through an operating subsidiary until it had established direct control instead of that obtained through holding company acquisition.

Oct. 21—The railroads filed with the Interstate Commerce Commission plans for a general readjustment of freight rates.

Oct. 23—The Interstate Commerce Commission granted the request for a temporary setting aside of more than 1,000 freight rate decisions and opened the door to general readjustment of the freight rates.

Oct. 29—The Interstate Commerce Commission approved free store-door service on freight.

Nov. 12—Government ownership of railroads to bring about long-delayed consolidation was condemned by Thomas W. Lamont of J. P. Morgan & Co., and recommended by Joseph B. Eastman, I. C. C. member and former Federal Coordinator of Railroads.

Dec. 7—The Senate Interstate Commerce Committee, under leadership of Senator Wheeler, began a far-reaching investigation of railroad financing.

Dec. 18—The Interstate Commerce Commission reported gains of 15.4 per cent in passenger revenue and 17.2 in freight income for the first class railroads in the first ten months of 1936.

Dec. 19—The Interstate Commerce Commission, in a 9-to-2 decision, Chairman Mahaffie and Commissioner McManamy dissenting, rejected the plea of the Class I railroads that the emergency freight rates, due to expire Dec. 31, be continued until sixty days after the commission's decision on the proposed general freight rate adjustment.

RECOVERY

July 2—Secretary Perkins estimated that 46,000,000 now had jobs, compared with 48,000,000 in the 1930 census.

CHRONOLOGY OF THE NATIONAL GOVERNMENT

- July 8—President Green of the A. F. of L. reported to President Roosevelt that the voiding of the NRA had cost the nation 839,123 jobs.
- July 12—The RFC made a sharp cut in interest rates to spur recovery; the Commerce Department estimated that the national income produced in 1935 was \$52,595,000, as compared with \$81,000,000 in 1929 and \$31,545,000 in 1932, the low point.
- Aug. 8—June building was reported as the best since 1929.
- Aug. 9—Commerce Department reported business the best since 1929.
- Oct. 2—The Chamber of Commerce of the United States estimated that there had been a gain of 7,000,000 jobs in private employment in mid-September, as compared with the depth of the depression.
- Nov. 8—Federal Reserve Board's commercial and industrial review of 1936 said that reports for the first ten months pointed to America's best business since 1930, with 1923-25 levels exceeded in many cases.
- Nov. 10—The President ordered administration agencies to make independent studies of the possibilities of achieving the principal goals of the NRA through a Federal Incorporation and Licensing Act.
- Nov. 11—The President, in a letter to the New York auto show, urged industry to direct every effort to maintain continuous employment.
- Nov. 13—The President issued a Thanksgiving Day Proclamation indicating his belief that depression was over for the nation.
- Nov. 16—The President greeted the Tampa convention of the A. F. of L. with a message of high optimism, asserting that "the return of prosperity had restored hope and happiness" throughout the nation.
- Nov. 18—The President, in a letter to Secretary Roper's Business Advisory Council, suggested a study of the problems of further absorption of workers by private industry, improvement of living conditions of low-income groups through low-cost housing and slum clearance, and betterment of wages and working conditions of employes in industry.
- Nov. 20—Secretary Perkins reported that 220,000 workers had returned to jobs in private manufacturing and non-manufacturing industry between mid-September and mid-October, payrolls increasing \$16,300,000; that factory employment in October stood at the highest level since March, 1930; the Chamber of Commerce of the United States reported that 8,500,000 had been re-employed in industry since March, 1933, of whom 3,000,000 had been put to work since May, 1935.
- Dec. 10—Labor and industrial management conferred with the Council for Industrial Progress, at Washington; letter from President Roosevelt gave no sign of his plan for industrial legislation.
- Dec. 11—The Council for Industrial Progress recommended a three-point program for industry calling for a revised NRA favorable to the "little man," amendments to make the anti-trust laws more effective and a system of government-guaranteed loans to small business similar to those extended to home owners under the Federal Housing Act.
- Dec. 27—Secretary Roper, in his annual report, declared that, with all major industries contributing to the recovery movement, the indicated national income of at least \$60,000,000,000 for the 1936 calendar year would probably equal income paid out for the first time since 1929.

RELIEF

July 10—The President revised the new PWA program so as to speed relief jobs; planned to make the most of the \$300,000,000 left in the revolving fund for the PWA held by the RFC.

July 15—The President ordered the PWA to resurvey some \$80,000,000 of proposed projects to ascertain whether these were justified as relief expenditures.

III. THE NATIONAL GOVERNMENT

Aug. 20—Revealed that the drought would cost Federal Government agencies \$100,000,000 in relief expenditures above the needs foreseen by Congress when it voted \$1,425,000,000 for relief during the current fiscal year.

Oct. 1—Administrator Hopkins announced that the relief load was the lowest since 1931.

Oct. 12—Hopkins gave an accounting of WPA costs since its outset reporting the outlay as \$1,772,756,795 up to Sept. 1, 1936, at an administrative cost of \$72,315,997, or 4.1 per cent.

Oct. 24—WPA members of the Workers Alliance of America, after marching about the White House and picketing WPA headquarters, failed in effort to lay before the President demands for more liberal treatment.

Nov. 12—Hopkins announced that relief cases had been cut 28 per cent from the peak of 5,316,000 in January, 1935, to 3,498,012 on Oct. 15, 1936, and predicted that this Winter would find 1,000,000 fewer persons on relief rolls than last year.

Nov. 17—Hopkins, in a speech before the Conference of Mayors, asserted that industry should cut working hours to give more jobs.

Nov. 18—The President urged industry to continue to increase its re-employment efforts and especially to make jobs for the big army of idle past 40 years of age.

Dec. 3—The Mayors and representatives of New York and ten other cities appealed to the President, then in South America, to halt cuts in WPA relief rolls.

Dec. 4—WPA officials pressed plans for reduction in WPA rolls.

Dec. 5—Delegation of WPA workers warned Aubrey Williams, Acting WPA Administrator, they would fight mass reduction in relief rolls; Williams told them lack of funds made it necessary to drop 175,000 workers by Dec. 15.

Dec. 8—Hopkins promised that the needy would continue to receive relief.

Dec. 9—Hopkins assured Mayor La

Guardia that the WPA would care for the real needy.

Dec. 11—Revealed that WPA relief rolls had been cut 93,700 more within a week.

Dec. 18—The President told a press conference that among his earliest requests of Congress would be one for a deficiency appropriation of \$500,000,000 for relief for the remainder of the current fiscal year, this being the sum necessary because of unforeseen burdens due to last Summer's drought. This sum would be in addition to \$1,425,000,000 already appropriated for relief for this fiscal year.

Dec. 23—WPA Administrator Hopkins, after a White House conference, denied reports that he might resign unless the President would allocate \$750,000,000 to continue relief work through the current fiscal year.

FINANCE CORPORATION

Aug. 6—Jesse H. Jones reported that 67 per cent of the loans made by the RFC had been repaid; total authorizations and commitments to July 31 were \$11,293,677,792 and \$1,067,015,238 was still available for borrowers and banks.

Sept. 23—Mr. Jones announced that repayments to the RFC were now exceeding loans made.

Oct. 4—The RFC reduced to 3 per cent the interest rate on advances to banks.

Oct. 10—Mr. Jones declared that the financial emergency was a thing of the past so far as the need for loans by the RFC in distress cases was concerned; the September outlay was only \$24,606,925.

SECURITIES

July 21—The SEC began its investigation of investment trusts.

Aug. 26—Rule to bar speculation by SEC employes was widened.

Sept. 7—The SEC, prescribing an accounting system for utilities, barred write-ups.

Oct. 15—The SEC required national securities exchanges to file annual financial statements to supplement data filed at registration in 1934.

CHRONOLOGY OF THE NATIONAL GOVERNMENT

Oct. 19—The SEC tackled the problem of granting unlisted trading.

Nov. 12—The SEC issued an order directing W. E. Hutton & Co. and others to show cause why they should not be suspended or expelled from securities exchanges for alleged manipulative activities contrary to the Securities Act of 1934.

SHIPPING

June 26—The President signed the bill carrying a broad revision of the Merchant Marine Act, including a provision that 75 per cent of the crews in all American ships must be American citizens.

June 30—The President signed the new Ship Subsidy Act.

Sept. 21—Maritime labor unions, led by Harry Bridges, urged Federal officials to delay the operation of the new Safety at Sea Act until the coming session of Congress.

Sept. 23—The President appointed three members of the Maritime Commission, headed by Rear Admiral Henry A. Wiley, to administer the new Maritime Authority Act.

Oct. 5—The Maritime Commission declined the maritime labor union request that the President be asked to suspend labor provisions of the new Safety at Sea Act so that the seamen might put their views before Congress.

Oct. 7—The Panama Canal Administration promised reforms in the method of assessing Panama Canal tolls.

Oct. 26—Strikes tied up shipping at all American Pacific Coast ports.

Oct. 30—A strike voted at New York on all United States shipping.

Nov. 2—Pacific Coast strikers widen their blockade of shipping.

Nov. 28—The New York Board of Trade appealed to Secretary Perkins to recognize the existence of a national emergency to end the national seamen's strike.

SOCIAL SECURITY

Sept. 28—John G. Winant resigned from the Society Security Board, so that he might be free to reply to Governor Landon's attacks on the Social Security Act.

Oct. 25—The Social Security Board scored political campaign warnings that a Federal tax would be deducted from workers' wages beginning Jan. 1, as being nearly all "misleading"; asserted that critics failed to note that its payment would eventually result in "substantial" old-age benefit payments.

Nov. 30—The nation's first suit testing the validity of the Social Security Act was argued before Judge Sweeney at Boston.

Dec. 3—A Federal grand jury at Washington indicted Dr. F. E. Townsend, author of the \$200-a-month old-age pension plan, and two of his aides, on charges of contempt of the House committee investigating the Townsend Plan.

Dec. 5—The Social Security Board granted a ten-day extension to Dec. 15 of the time for filing of employees' application forms under the old-age pension provisions of the Social Security Act.

Dec. 7—Federal Judge Sweeney upheld the validity of Title 9 of the Social Security Act; upheld the right of Congress to levy payroll taxes on employers for the unemployment compensation system set up under the act.

Dec. 9—House committee which investigated the Townsend Plan held it to be "economically unsound."

Dec. 15—The Social Security Act reached the Supreme Court of the United States when George P. Davis, stockholder in the Boston and Maine Railroad, sought a constitutional test of the law.

SUPREME COURT

July 1—Received its first case, that of Bradley Lumber Company, involving constitutionality of Wagner Labor Relations Act.

Aug. 28—Illinois urged the Supreme Court to rehear the minimum-wage case.

Sept. 29—Federal Government supported plea of The Associated Press for a Supreme Court review of its controversy with the National Labor Relations Board in the Morris Watson case.

Oct. 5—Massachusetts supported

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- New York in demanding from the Supreme Court a reconsideration of its 5-to-4 decision in the Tipaldo case by which the New York State Minimum Wage Act had been declared unconstitutional on June 1.
- Oct. 12—Refused to grant rehearing of New York State Minimum Wage Act case; ruled in favor of New Deal in Utility Act plea, agreeing to review the government's fight to stave off all legal attacks on that constitutionality until the Electric Bond and Share case had been decided.
- Oct. 19—Suit challenging constitutionality of New York Mortgage Moratorium Act, due for argument in the court, withdrawn by agreement of attorneys on both sides; the court refused to review the case of J. Edward Jones seeking a test of constitutionality of the Securities Act of 1933.
- Oct. 26—Assurance given that test cases on constitutionality of Wagner Labor Relations Act would be decided at present term through acceptance of The Associated Press, and the Washington, Virginia and Maryland Coach Company lawsuits for argument at an unnamed date.
- Nov. 7—The court announced that Justice Stone, liberal member, was too ill to occupy the bench during argument of important cases.
- Nov. 9—Granted three more reviews of the Wagner Labor Relations Act in cases of Freuhauf Trailer Company, Jones & Laughlin Steel Company and Friedman-Harry Marks Clothing Company; upset The Iowa tax on chain stores; ruled in favor of the three Neidecker brothers in their fight against extradition.
- Nov. 11—The New York Unemployment Insurance Act was attacked in the Supreme Court as arguments began on three demands to test the constitutionality of the state's social security program; The Associated Press hit radio "piracy" of news in a suit to enjoin a radio station from using its dispatches.
- Nov. 23—Upheld the New York State Unemployment Insurance Act in a 4-to-4 tie vote.
- Dec. 7—Upheld the California and Illinois "fair trade" acts prohibiting the sale of standard trade-marked products at prices less than those fixed by producers; upheld the stay of suits against the Public Utility Holding Company Act pending a decision in the Electric Bond and Share case; sustained a Federal Communications Commission order for "original cost" accounting by telephone companies on property valuations as neither harsh nor unreasonable.
- Dec. 8—Government intervened in a new test of the Congressional gold clause joint resolution in the Holyoke Water Power Company case.
- Dec. 14—Ordered the Duke Power Company case back to the lower courts for retrial without expressing an opinion on the right of the government to finance publicly owned hydroelectric plants in competition with private enterprise; asked for a rehearing by a full court of nine justices in the New York Unemployment Insurance Act case, by employers who lost in the 4-to-4 decision of Nov. 23 and who contended that the act's constitutionality had been left in doubt; ended The Associated Press news piracy suit on a technicality.
- Dec. 21—The Supreme Court upheld the Joint Resolution of 1934 which authorized the President to proclaim embargoes on arms and munitions against Bolivia and Paraguay, combatants in the Chaco War, thereby backing the administration's neutrality policy; granted a review of the constitutionality of the Frazier-Lemke Mortgage Moratorium Act which Congress passed following rejection of the original Frazier-Lemke Act of 1934.

TAXATION

- Aug. 13—White House announced, after the President had conferred with Secretary Morgenthau, Senator Harrison and Representative

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

Doughton, that no tax increases would be sought in the 1937 session of Congress.

Aug. 24—Secretary Morgenthau reiterated his stand against Federal tax revision.

Nov. 10—The President, in a press conference, repeated his pledge not to propose new taxes; said there would be no retroactive tax cuts and eliminated 1936 from any drop in corporation levies.

Nov. 20—Senator Harrison, chairman of the Senate Finance Committee,

asserted there would be no increase in taxes by the coming session of Congress; that emergency spending would be curtailed to balance the budget by 1938.

Dec. 13—The Internal Revenue Bureau released an analysis of statistics of income for 1934 showing thirty-three persons had incomes of more than \$1,000,000 each in 1934.

Dec. 14—The Internal Revenue Bureau announced that forty-one persons had incomes of more than \$1,000,000 each in 1935.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut Street, Philadelphia, Pa.

AMERICAN BAR ASSN., 1140 N. Dearborn Street, Chicago, Ill.

AMERICAN POLITICAL SCIENCE ASSN., 205 Bennett Hall, University of Pennsylvania, Philadelphia, Pa.

COMMERCIAL LAW LEAGUE OF AMERICA, 111 W. Monroe St., Chicago, Ill.

HONEST BALLOT ASSN., INC., 27 William Street, New York City.

LEAGUE FOR POLITICAL EDUCATION, 123 West 43rd St., New York City.

NATIONAL ASSN. OF LEGAL AID ORGANIZATIONS, School of Law, Duke University, Durham, N. C.

NATIONAL CIVIL SERVICE REFORM LEAGUE, 519 Fifth Ave., New York City.

NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION, 302 E. 35th Street, New York City.

DIVISION IV

STATE GOVERNMENT

STATE ADMINISTRATION AND LEGISLATION

BY RODNEY L. MOTT

DIRECTOR, SCHOOL OF SOCIAL SCIENCES, COLGATE UNIVERSITY

LEGISLATIVE SESSIONS

Although the legislatures met in regular sessions in only nine States during 1936, law-making activity was by no means at a standstill. In addition, 45 special sessions were called in 33 States. It is to be expected that more special sessions will be called in even-numbered years, when only nine legislatures meet regularly, than in odd-numbered years when 43 legislatures normally convene. But the number of special sessions during 1936 was unusual even for "off years," although it did not establish a record. Some of the special sessions were very short, as, for example, that in New York which lasted only three hours and passed but two bills. On the other hand, the Illinois legislature was in almost continuous special session until Dec. 10 and, in the meantime, two other special sessions were called to convene concurrently with the continuing special session.

Half of the special sessions were called during the last two months of the year, the general purpose being to provide for the enactment of social security legislation in order that the employers within the States might take advantage of the rebate provisions of the Federal Social Security Act. As of Dec. 20, 30 States had passed unemployment insurance acts, 28 of which were approved by the Social Security Board. The second major legislative problem of 1936 was taxation. Changes

were made in the tax system of a number of States, in most cases designed to secure additional revenue for the emergency needs of state and local governments. In a few States, the revenue laws were altered to shift the burden of taxation from one group of taxpayers to another.

LEGISLATIVE COUNCILS

Virginia and Kentucky have now joined Kansas, Michigan, and Wisconsin in providing for an official discussion of legislative problems before the regular sessions convene. Each of these States has established a legislative council with the duty of formulating a legislative program and of gathering data on the various aspects of it. This procedure is designed to save the time of the legislature when it meets in regular session. In general these councils are charged with the duty of investigating and studying any question which is referred to them by the legislature, the governor, or one of their members. Kentucky's newly created legislative council, as do these bodies in some of the other States, contains administrative officials, including the governor and lieutenant governor, as well as members of the Senate and House of Representatives.

MOTOR VEHICLE LEGISLATION

Almost every one of the 1936 legislatures which met in regular session passed some acts relating to motor

STATE ADMINISTRATION AND LEGISLATION

vehicles, but study of these fails to reveal any definite trend of opinion among the law-makers. The plethora of statutes indicates a willingness to experiment rather than a settled conviction as to the best remedies for the problems raised by motor vehicles. Thus New York repealed half of its 2¢ emergency gasoline tax, while Louisiana added 2¢ to its gas tax, the proceeds to be used for social security. Maine voters, on the other hand, overwhelmingly endorsed an initiative measure declaring against the diversion of motor vehicle taxes for other purposes than assistance to motorists.

A number of the States have postponed registration dates until the spring months in order to avoid the confusion that develops every year over dead tags. This, however, has produced a situation in which a lack of uniformity is extremely confusing to enforcement officials, and there is considerable demand for the development of some uniform licensing procedure.

Three States changed the speed limits. Alabama eliminated its maximum speed limit and adopted a statute merely requiring that speed be reasonable and proper. Vermont, which formerly had no maximum limit, has now established a maximum limit of 45 miles per hour. Mississippi increased the maximum limit from 40 to 50 miles an hour. Laws requiring safety glass in new cars were enacted in South Carolina and Louisiana. New York State enacted a law requiring each automobile to be equipped with a red reflector three inches in diameter. Provision was made for an increase in the personnel in the highway patrol in both Virginia and New York. Kentucky was the only State to adopt a safety responsibility law, bringing the number of States which have adopted legislation of this character during the past biennium to six. Ohio has enacted a law which provides for a driver's license to be issued only upon examination of the applicant.

ADMINISTRATION OF JUSTICE

New York.—Interest in new legislation on the subject of the administration of justice centered largely in the fate of Governor Lehman's Crime Control Program in the New York Legislature. This program grew out of a conference in Albany in the fall of 1935 at which more than 900 delegates representing administrative officers, advisers, and experts drew up a 60-point program for crime control. In carrying out this program 39 bills including some of the most important ones were enacted. Most of the changes concerned the details of judicial administration rather than its fundamental structure or the powers of administrative officers.

There is hardly an aspect of criminal administration which was not affected by the New York legislation. Some of the new laws related to reorganization of the courts, notably the creation of an executive head for the felony courts in New York City. Others changed the probation services, providing for a probation commissioner to be appointed by the governor instead of by the Commissioner of Corrections and reorganizing the probation work in New York City. Sharper restrictions were made in the illegitimate possession and use of fire arms, and penalties were increased for the commission of crimes while armed. A number of bills were passed to increase the powers of the police in gathering identification information. Steps were also taken to clear up some of the malodorous practices which had surrounded the furnishing of bail by professional bondsmen.

Efforts made to throw additional light on the public prosecuting offices grew directly out of the experience of New York City as disclosed by recent investigations. Henceforth a New York District Attorney must make public his reasons for accepting a lesser plea of guilt in place of seeking a conviction on the defense charge. Another measure of special significance materially decreases exemptions from jury service. The New York law has long been chaotic in this respect, but only after a severe struggle was the legislature able

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sharply to decrease the exemptions which may be claimed under it.

New York, in common with several other States, passed four measures recommended by the Interstate Crime Commission which are designed to reduce the difficulties of criminal control due to the ease with which criminals and witnesses may escape across state boundaries.

Arkansas.—The voters of Arkansas, in the November elections, passed two measures designed to reform some aspects of the administration of justice in that State. The first of these—an initiative proposal—simplifies court procedure and it is hoped that it will materially reduce the cost of conducting the circuit courts. The act also will give newspapermen professional immunity from punishment for refusing to disclose to judicial agencies the source of published information, provided it was "published in the public interest." The second measure to secure popular approval was a constitutional amendment permitting prosecutions to be based upon information filed by the prosecuting attorney as well as by indictment returned by the grand jury. This amendment also empowers the legislature to remove prosecuting attorneys from the fee system and to provide a fixed salary for them.

STATE PLANNING

Scope of the Movement.—All the States, except Delaware, have now embarked upon state planning through the establishment of a state planning board or commission. In 36 of the States, the commissions have been created through legislative enactment. In the others, they have been established by executive order of the governors. During 1936, the Louisiana legislature established a state planning board, and Mississippi and Pennsylvania provided statutory authority for their planning boards. The Pennsylvania act is particularly significant in that it authorizes the board to go beyond the creation of a master plan for state development. The board is given supervision of a ten-year construction and financial

program, in order to assist in the stabilization of industry and employment through a long-term budgeting of capital expenditures.

New York Charter.—The adoption of the charter in New York City at the election of Nov. 3 marked a second important step forward in planning progress in the United States. Under this charter, a planning commission will be established which will have wide authority in connection with the approval of the capital budget for the city, will be appointed by the mayor and will be charged with the duty of drawing up a master plan and approving capital expenditures which may be appropriated to carry it into effect.

The American Society of Planning Officials, established in 1935, has been rapidly developing its services as a clearing house for commissions and staffs engaged in national, state, county, or city planning. It not only cooperates with planning commissions but with agricultural departments, highway departments, zoning commissions, and other agencies which are indirectly interested in planning activities. Through the provision of a research staff to answer technical and administrative inquiries pertaining to planning, through the holding of planning conferences (165 representatives from 22 States attended the 1936 annual conference of the Society), through its various services to planning officials, and through its various publications, the Society of Planning Officials aims to serve this newcomer in the field of governmental officers.

American Public Works Association.—The American Society of Municipal Engineers and the International Association of Public Works Officials merged during the year to establish a single association to be known as the American Public Works Association. These organizations have been in existence many years and it was found that the services of their secretariats could be considerably improved through joint efforts. Thus for the past two years they have maintained a joint secretariat in Chicago in close cooperation with

STATE ADMINISTRATION AND LEGISLATION

other agencies, particularly the Society of Planning Officials and the American Municipal Association. The new Association will continue to maintain this secretariat.

STATE REORGANIZATION IN KENTUCKY*

Redeeming a campaign promise, Governor A. B. Chandler of Kentucky appointed a Reorganization Commission immediately upon assuming office in December, 1935. The commission, assisted by consultants from the University of Kentucky, drafted a reorganization act which passed the Legislature, and was approved by the Governor July 1, 1936. The act proposes to reorganize the State's administrative machinery "from top to bottom."

The act, known as the "Governmental Reorganization Act," sets up seven constitutional administrative departments, ten statutory administrative departments, and six independent agencies. The constitutional departments are as follows: the Office of Governor, Department of State, Department of Treasury, Department of Agriculture, Labor and Statistics, Department of Education, and Department of Military Affairs. These are headed by elective officials with the exception of the Military Department, which is in charge of an Adjutant General appointed by the Governor. The statutory administrative departments are as follows: finance, revenue, highways, welfare, health, industrial relations, business regulation, conservation, libraries and archives, and mines and minerals. Each one of these is headed by a commissioner appointed by the Governor. The independent agencies are: auditor of public accounts (elected by the people), legislative council, board of election commissioners, railroad commission, state racing commission, and public service commission.

The new administrative organization is characterized by the following principles: (1) Power is concen-

trated in the hands of the governor. (2) Single commissioners rather than boards are used to head departments. There is no board in Kentucky at present serving in an administrative capacity. All have become exclusively advisory. (3) Like functions are grouped in the same department. (4) Responsibility is pyramided within departments by dividing such statutory administrative departments into divisions headed by directors appointed by the commissioner in charge of the department. These appointments must have the approval of the Governor. (5) The department of finance is used as a coordinating device. In this respect the Kentucky system bears a striking resemblance to the British administrative organization.

Three striking departures from previous attempts to reorganize the Kentucky state administration are found in the new system. First, a division of personnel efficiency, within the department of finance, regulates and centralizes all personnel matters within the State's classified service. While this does not provide a real merit system in government, it constitutes a long step in that direction. The division is required to test and pass upon qualifications for positions in the State's classified service. It maintains a roster of all employees in the state service; it ascertains the correctness and validity of all payrolls; it classifies all state positions; it prepares compensation plans; it installs and administers service rating systems, and it certifies to various state agencies such qualified employees as may be needed.

A second important step in this act is the creation of a strong revenue department consisting of the following divisions: general taxation, motor vehicles, local finances, research and statistics, excise taxes, and income taxes. The third striking departure is seen in the Highway Department. Heretofore the Highway Department has been administered by a nine member board. Under the Governmental Reorganization Act this department is placed in charge of a single commissioner of highways, as-

* Data furnished by Dr. John M. Manning, Director of Personnel, Commonwealth of Kentucky.

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sisted by an advisory board and a state highway engineer, who, under the direction of the commissioner, supervises all construction and maintenance work of the department.

In working out its new administrative program, Kentucky employed the technical assistance of Public Administration Service. This governmental research and survey organization aided in drawing up the procedures and making the installation for the new state organization. It is now planned to prepare a series of comprehensive manuals to facilitate these operations in Kentucky and to aid other States in securing higher standards of administration. The success of the act appears to be assured. Under it, the State is living within its income, gradually paying its debts, and undoubtedly performing more service more efficiently than before.

RESEARCH IN PUBLIC ADMINISTRATION

State Surveys in Progress.—Surveys have been in progress during the past year in a number of States to determine what changes may be needed in the structure of the state government or in the machinery of municipal control. In Oregon an interim commission has carried to completion a comprehensive research program in cooperation with the state planning board. In Connecticut an interim commission on the reorganization of state departments will soon complete its work and it is expected that a report will be made to the next session of the legislature. The University of Michigan Bureau of Government conducted a study of the administrative organization of Michigan, a report of which was published during the past year. Surveys of part or all of the state machinery are also under way in California, Minnesota, and Ohio.

Social Security Administration.—The Committee on Public Administration of the Social Science Research Council has extended its investigation during the past year to include a comprehensive study of the administrative aspects of the

Social Security Program. This study will include a survey of employment offices, the unemployment compensation program, and old age assistance. While a great deal has been written on the economic and social aspects of these services, the administrative problems involved in the Social Security Program have been largely neglected. The studies of the Committee on Public Administration in this field are timed for completion during 1937. Already various members of the staff of the Committee have been asked to advise on legislation and on administrative organization in a number of states which are setting up social security administrations.

Parole Practices.—The Federal Department of Justice, through a grant of funds from the Works Progress Administration, is making a study of parole practices in 45 of the States and in the District of Columbia. Upon the completion of this survey, facts relative to parole, probation, and other forms of release from penal institutions and courts will be available. The study is being made by a survey staff, members of which were given special preliminary training before embarking upon their duties. The consent of the proper authorities in each State was obtained before the investigation was begun in it, and the local officials have given utmost cooperation to the research staff in the prosecution of this study. It is the aim of the survey not merely to study parole but to include the whole range of practices in connection with probation, pardon, commutation, and credit systems in penal institutions. The survey is designed to develop definite standards which will help in bringing about the administration of a better penal system.

CIVIL SERVICE*

Extension of Merit System.—Civil service was forcibly brought before the country early in 1936 when the National League of Women Voters, through its state organizations, began a strong campaign for the

* Data furnished by G. Lyle Belsley, Executive Director, Civil Service Assembly.

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extension of the merit system in all the States and in the Federal Government. This interest continued throughout the political campaign as the League of Women Voters forced local and national candidates to take a definite stand on the merit system.

The adoption of the Social Security Act by the United States Congress stimulated the extension of the merit system in a number of States. Michigan, Indiana, Florida, Oklahoma, and Texas adopted merit systems for public welfare departments which had contacts with the Security Board. In South Carolina and Utah merit systems are required by law in these departments and New Mexico is proposing to adopt a merit system for its Welfare Department also. The New Hampshire Unemployment Compensation Division of the State Bureau of Labor established a merit system in 1935 and gave its first examination in January, 1936.

Spread of Civil Service Legislation.—As was noted in the description of its administrative reorganization, Kentucky established a personnel division without passing a formal civil service law. Other States also moved in the direction of establishing civil service. In Oklahoma, Governor Marland came out strongly in favor of a civil service law. Governor-elect Bailey of Arkansas appointed an "honorary civil service commission" to consider the details of a state merit system law, but he has not as yet taken office and consideration of the recommendations of this Commission were deferred to 1937.

Michigan Survey.—In 1935 Governor Fitzgerald of Michigan appointed a Civil Service Study Commission, headed by Professor James K. Pollock of the University of Michigan. During 1936, this commission made surveys of present personnel practices in the state government and of the merit system programs of those States which have civil service systems. Recently it completed a bill for introduction in the Michigan legislature in 1937. Following the recommendations of this commission,

Governor Fitzgerald established in April a merit system for prison guards in all state institutions, and extended a merit system to the State's emergency welfare relief organization.

Civil service changes were effected in other states also. In Oregon, a state law was passed providing that cities over 5,000 should vote on whether or not they desired civil service for firemen. Six of the cities—including Astoria—voted "yes." In Ohio, a decision by the State Supreme Court forced county department heads to desist from evading the provisions of the state civil service law through appointing all of their employees as deputies, deputies being exempted. This decision materially strengthened the civil service commission's authority over the counties. In New York, the State Temporary Emergency Relief Administration upheld the principle of merit by opposing local residence requirements in New York City. It threatened to stop further funds to the city unless the adoption of the local residence rule was suspended. This year, also, the New York Supreme Court forbade the State Legislature to revive a civil service eligible list after it had expired.

Civil Service in Cities.—In addition to the general extension in the merit system for the States, a number of cities have indicated their desire to join the roll of government agencies in which employees are selected on the basis of fitness rather than spoils. In Michigan, the system will apply to all municipal employees in Muskegon, while in Adrian and Ypsilanti firemen were brought under the merit system. Rahway, N. J. and Camden County, N. J. approved a measure to join the 19 other local governments in that State which hire employees who have been examined and approved by the State Civil Service Commission. In various other cities, particularly in California and in Michigan, the movement is spreading to contract with outside agencies for personnel services. Thus Southgate and Inglewood, California, each have contracts with the Los Angeles County Civil Service Com-

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mission to examine their prospective policemen. Three Michigan cities are now cooperating in a personnel system organized under the Michigan Municipal League. Under this plan, the League maintains a staff of personnel technicians who render continuous service to the cities upon a cost basis. Through this pooling of their resources, the cities are able to get a superior personnel service at a cost within their means.

Public Attitude.—The States in general showed a marked inclination to favor the merit system. A newspaper inquiry conducted by Dr. George Gallu, found that throughout the United States approximately 88% of the people definitely favored civil service. The activities of many professional and civic organizations throughout the United States tended to confirm this finding. At the National Conference of Social Work this year, many speakers strongly supported the merit system and urged its adoption by all welfare organizations. The General Federation of Women's Clubs at its annual meeting resolved to support strongly the extension of civil service in government. The Public Affairs Committee of Washington, D. C., published a pamphlet entitled "Our Government—For Spoils or Service?", as its share to the fight for the merit system. The American Prison Association at its national meeting urged the extension of the merit system to all prisons in the United States. The International Association of Governmental Labor Officials endorsed the civil service system at its annual meeting this year. The American Legion Posts in two States, Michigan and Minnesota, urged that their States establish civil service commissions.

The National Civil Service Reform League, with its headquarters in New York City, organized and developed the expression of the people in favor of civil service. A vigorous campaign is being conducted at the present time to secure 3,000,000 members in this league who will promise to support the movement for better government.

The Civil Service Assembly of the United States and Canada, which is an association of civil service commissions and other personnel agencies of national, state, county, and city governments, established a Headquarters Office in the summer of 1935. During 1936 it expanded its activities to include a wide variety of services. The Assembly at the present time serves as a clearing house on matters of public personnel administration; encourages cooperation among personnel agencies; conducts and encourages research in all phases of personnel administration; provides technical advice and consulting service on public personnel practices for civil service commissions, public officials, and civic groups interested in the merit system; prepares civil service tests and facilitates the interchange of test material among public personnel agencies; prepares civil service laws, ordinances, rules, and regulations; prepares and analyzes personnel records; holds an annual meeting and annual regional conferences. The Assembly publishes a monthly *News Letter* which contains items of interest to public personnel administrators. It publishes the proceedings of its annual meeting and in addition issues a series of bimonthly pamphlets on semi-technical employment subjects. Assembly field representatives were called upon for information and advice and made personal visits to States, counties and cities throughout all sections of the country.

TRAINING FOR THE PUBLIC SERVICE

The past year has witnessed an unusual development in efforts to provide more satisfactory training for the public service. Many public personnel officers no longer consider their job complete when they have examined candidates for appointment. There is growing up among these officials a feeling that they should assume responsibility for the entire personnel service of the government. Group thinking in this particular respect has been quickened by the passage at the last session of Congress

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of the George-Deen Act which enlarges the scope of vocational education, for which the Federal Government furnishes aid, to include training for public service occupations. If Congress furnishes the financial backing to put this act into effect, it may revolutionize the training of employees for the public service in States and colleges.

Some 80 colleges and universities now offer general undergraduate work in Public Administration. Most of these courses, however, have been initiated within the past five years and in general the instruction is along theoretical rather than practical lines. Specific training for public service occupations has been confined to a handful of institutions. During the past year indications of a change in this situation have come from as widely separated institutions

as Harvard University, Syracuse University, University of Michigan, and University of Minnesota.

There has been only a moderate development of in-service training for employees already on the job in state and local departments. Where it is provided, in-service training has most frequently been limited to state and local police officers, city firemen, and public school administrators. During the past few years, various professional organizations of public officials, such as the National Recreation Association, and the International City Managers Association, and State Leagues of Municipalities have entered this field. Under these auspices numerous training schools, institutes, or extension courses have been conducted. It is estimated that the total enrollment in these efforts is around 15,000 state and local public officials.

NATIONAL AND INTERSTATE RELATIONS OF STATES

BY RODNEY L. MOTT

DIRECTOR, SCHOOL OF SOCIAL SCIENCES, COLGATE UNIVERSITY

PROGRESS IN COOPERATION

The movement for interstate cooperation began to assume real government significance during 1936. As during the past two years, the Council of State Governments played a leading rôle in calling conferences of state officials, organizing agencies for interstate cooperation, and furnishing staff assistance to various interstate commissions. While the Council was most active in furthering interstate cooperation among the Atlantic seaboard States, its efforts were not confined to that region and extended as far west as Colorado.

COMMISSIONS ON INTERSTATE COOPERATION

Following the lead of New Jersey and New York, which in 1935 established commissions to cooperate with like agencies in other States, fifteen more States had established similar commissions by the end of 1936. These seventeen agencies vary slightly in their composition, but they

all have for their object the study of problems which a single State cannot solve alone, and the recommendation of uniform methods of meeting them. The typical Commission on Interstate Cooperation consists of 15 members, five chosen by the State Senate, five selected by the State House of Representatives, and five appointed by the governor.

Twenty-eight States were represented—17 officially and 11 unofficially—at the annual Assembly of Commissions on Interstate Cooperation in Chicago in April. This meeting had the task of perfecting the machinery for bringing the States closer together and to conduct discussion of common problems. During the past two years the Council of State Governments has maintained a regional office in New York City. The success of this extension of its work was so great that the Assembly requested that additional regional offices be established as rapidly as

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support for them could be secured. Reports were presented from two of the commissions which are studying particular problems of interstate concern—the Tax Revision Council and the Interstate Commission on Crime. The Assembly adopted a proposal to establish an Interstate Commission on Social Security which would aim to harmonize state legislation and administrative practices in the fields of welfare, relief, and social security.

INTERSTATE COMMISSION ON CRIME

The Interstate Commission on Crime, which was established in 1935 by the Council of State Governments, held its second annual meeting in Boston in August, 1936, with representatives from more than half the States and the Federal Government in attendance. During the year, one or more acts which the Commission had approved at its first meeting were adopted by nine States. These acts simplify the procedure of extraditing criminals, facilitate the summoning of out-of-state witnesses, permit officers to cross state lines to arrest suspects, and authorize interstate compacts for the supervision of criminals on parole. New York and New Jersey adopted all four of these proposals, and Rhode Island adopted three. At its 1936 meeting, the Commission extended its recommendations to include the further use of teletype and radio communication systems, the establishment of state bureaus of identification and investigation, restrictions on the sale of firearms, and national support of an educational program for crime prevention. The Commission also recommended that Congress establish in the Department of Justice a clearing house of information on crime control methods and equip the Department for further educational training of state and local law enforcement officials.

CONFERENCE ON UNIFORM SETTLEMENT LAWS

Twenty-six States sent representatives to a Conference on Uniform Settlement Laws and care of transients. This Conference was called by the New Jersey Commission on In-

terstate Cooperation, and tackled the problem of securing a more uniform time for legal settlement for relief and welfare purposes. The time now varies from three months in Wyoming to five years in many of the Atlantic States. These laws work a very real hardship on transients who find themselves stranded without funds away from their former home. The Conference considered three possible solutions to this problem: first, the adoption of a uniform act providing for the transfer of dependents by different States; second, ratification of the proposed compact for the settlement of migratory workers; third, approval of reciprocal agreements between the States on these matters. A continuation committee was appointed by the chairman of the Conference to give further consideration to these problems and to prepare definite proposals for the next conference.

INTERSTATE COMMISSION ON SOCIAL SECURITY

The Interstate Commission on Social Security, which was authorized by the 1936 Assembly of Commissions on Interstate Cooperation, held its first meeting in June in Atlantic City. Delegates from a dozen States discussed the organization which the Commission should effect and the problems which it should tackle. On some of the problems, recommendations for immediate action were made. These included approval of the one-year uniform settlement law and of the proposal that the merit system be used exclusively in administering the state Social Security Acts. Other problems were of such a nature that the Commission felt it desirable to recommend further study of them by a committee or some other agency. Among these problems were the interchange of records of vital statistics between the States, uniform legislation concerning liens which might be imposed on recipients under the social security laws, and uniform administrative procedures for carrying the social security laws into effect. Throughout the discussion it was evident that the Commission felt that

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the problems of social security were such that they could be solved only by joint state action in cooperation with the Federal Government.

TRAFFIC SAFETY CONFERENCE

The Council of State Governments has given attention to a number of problems of regional rather than national interest. One of these is the problem of conflicting traffic regulations. Nine States met in New York in a regional highway safety conference in January, 1936 and proposed statutes providing for the reciprocal reporting of motor vehicle records and accidents and for instruction in highway safety in the schools. The Conference also authorized the New York Joint Legislative Committee on Interstate Cooperation to develop a future program of highway legislation and to report their recommendations at the next meeting of the regional highway safety conference in January, 1937.

WATER PROBLEMS

A second regional meeting assisted by the Council of State Governments was the conference on the problems of the Delaware River Basin, held at Shawnee-on-the-Delaware. Nearly 400 legislators, public officials, and other interested citizens were in attendance at this meeting at which attention was given to the problems of stream pollution. The conference supported an agreement between the States involved to abate industrial and sewage pollution of the Delaware, the agreement to be worked out with the aid of technical assistance from the States and the Federal Government. It urged the States to provide additional recreational facilities along the stream, to harmonize their fishing laws, to study the conservation of wild life, and to prevent the commercialization of scenic areas. A sub-committee was appointed to consider these proposals and to prepare a definite legislative program for use of a joint committee of the participating States in the 1937 legislative sessions.

Problems of watersheds have given rise to other interstate developments

during the past year. The Interstate Sanitary Commission created in 1935 by New York, New Jersey, and Connecticut, is seeking methods to control pollution of water around New York City, particularly Flushing Bay, the site of the 1939 World's Fair. Connecticut, New Hampshire, Vermont, and Massachusetts have joined in setting up an Interstate Compact Commission to deal with the joint problems of their watersheds. The Conference on Interstate Regional Problems participated in by Colorado, Wyoming, and Nebraska has interested itself in water problems in that area.

INTERSTATE PRISON COMPACT

The Association of States, which was projected last year to form an Interstate Prison Compact, was established as a going concern in 1936. Five regional conferences were held on this problem and 25 States reaffirmed their intention to go forward with the formulation of the Interstate Prison Compact. At the Chicago meeting in September, there were representatives from 17 States which are members of the "Association States Signatory to the Interstate Prison Compact," and, in addition, 12 non-member States were unofficially represented. The Association considered the tentative draft of a proposed state-use law, which will be resubmitted at a future meeting after being revised to meet the suggestions of the representatives of the member States. The Association is also co-operating in the nation-wide prison survey of release procedure which is being made by the United States Attorney General.

Perhaps the most important work of the Association, however, relates to the formulation of the Interstate Prison Compact. This Compact, as adopted at the September meeting, will be referred to the States for ratification. It provides for the establishment of an Interstate Prison Commission to carry the Compact into effect. It is specifically provided, however, that no action of the

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Commission "which shall affect the penal policy of any State Signatory shall be binding upon any state except with the consent of the appropriate authorities of that state." The proposed by-laws of the Commission indicate that it is to assist each State in determining the fair market price for any prison product, that it may be used as a referee to which complaints of persons, firms, or other States against the policy of prison industries may be referred, that it may collect statistical and other data and render reports on them to the various States, and that it may co-operate with state and Federal prison administrations to improve and maintain their standards.

INTERSTATE OIL COMPACT

The Interstate Oil Compact, which was signed by representatives of various oil producing States on Feb. 16, 1935, has now been approved by Congress and ratified by Texas, Oklahoma, Kansas, New Mexico, Colorado, and Illinois. This Compact creates a State Oil Compact Commission with a representative from each of the member States. The Commission is charged with the duty of studying methods to bring about conservation and to prevent waste of oil and gas, and also to recommend

measures for the coordination of state police powers to this end. Resolutions of the Commission must be carried by a majority of the States as States and also by a majority of the oil producing interests represented by the States. The Commission has held quarterly meetings during 1936 at which were reported its studies of the conservation laws of the various States and a proposal for a uniform act to prevent waste of oil and gas. It has cooperated with the United States Bureau of Mines in securing and disseminating impartial statistical data, and has actively worked for the coordination of the conservation efforts of the various States. As a result of its efforts, changes have been made in the conservation laws of Kansas, Oklahoma, Texas, and New Mexico. Its work is largely done through committees, one on conservation and a second on coordination. The Interstate Oil Compact is unique in that it will terminate automatically on Sept. 1, 1937, unless it is renewed. At its last meeting in 1936, the Commission considered the desirability of continuing the Compact for two years more and recommended that the state legislatures pass the appropriate resolutions to do so.

STATE CONSTITUTIONS, REFERENDA AND INITIATIVES

BY WALTER SANDELIUS

PROFESSOR, UNIVERSITY OF KANSAS

GENERAL

A larger number than usual of the measures referred to the electorates of the several States during 1936 were those concerned with changes in the organization of government and with redistribution of functions among governmental units. It may be that there is a degree of restiveness in the political bodies of the United States, rather than any marked sign of a popular disposition to accept improvements of the kind that would be generally recommended by the experts in state and local government.

GOVERNMENT ORGANIZATION AND FUNCTIONS

Constitutional Conventions.—It was voted in New York State by a large majority to authorize the calling of a constitutional convention for the drafting of a new constitution, under which government might better cope with immediate and anticipated problems. The proposal was opposed by both the Republican and Democratic party organizations, each fearing the use that the other might make of the power of the convention to divide the electoral districts for

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the choosing of assemblymen. The opposition failed, however, and at the assembly election in 1937 delegates will be chosen to the convention which will be held in the early part of 1938. Rhode Island voters rejected a similar proposal for the calling of a constitutional convention to amend and revise the constitution of that State.

Executive and Administrative Offices.—Adopted in South Dakota were two constitutional amendments which provide respectively for the election of state and county superintendents of public instruction on non-partisan ballots, and for allowing occupants in these offices to serve for more than four years in succession. Georgia decided against an elective state superintendent of schools in lieu of the present board of school commissioners; rejected also amendments to provide for election of a lieutenant-governor and a president of the senate, and to extend the terms of elective state officers to four years. Texas, too, gave evidence of the general distrust of democracy for its own institutions in the adoption of an amendment which fixes the salaries of the governor and the other executive officers of the State. In Louisiana there was added a constitutional provision for a new department of public revenue headed by an appointive commissioner. California refused to allow the reorganization of the old railroad commission into a state public service commission with power to regulate all public utilities within the State. Nebraska voters added to the November election an ironic touch when they elected a single Republican to state office, and in the same election voted to abolish the office to which he was elected (commissioner of public lands and buildings), the abolition to become effective immediately.

Legislative Organization and Powers.—South Dakota provided for an increase in the legislative membership; also for a reapportionment. Oregon voted to permit an increase in the salaries of state legislators, while Utah, Missouri and Washington declined to approve sim-

ilar propositions. Maryland accepted an amendment authorizing the governor to fill by appointment vacancies in the general assembly. California refused to allow a widening of the limitation upon funds that may be used toward legislative printing, so that the histories of bills and the debates upon them might be made available for public distribution.

Changes in Local Government.—West Virginia, through a constitutional measure, now allows home rule for cities of more than 2,000 inhabitants. Montana approved a measure which prescribes procedure for the consolidation of counties. Florida approved city-county consolidation in Key West, this city for some years past having been practically bankrupt. California voters, by a very narrow margin, rejected a proposal to make generally possible city and county consolidation through local referendum. Rejected also by California was a measure aimed to put city and county offices generally on a merit basis. In Michigan a measure was defeated which would have allowed the incorporation of counties and the adoption of county charters. California approved an amendment permitting cities and towns to elect boards of freeholders to formulate new charters for municipal corporations; it defeated, however, a measure providing for the permanent registration of voters.

TAXATION

Property Tax.—There was the usual variety of referred measures, both constitutional and statutory, concerned with aspects of taxation and public revenue. The property tax seems still to retain, in the main, the approval of electorates. Voters in five States rejected abolition or general limitation of property taxes, while only two States approved tax limit proposals. In Michigan a proposition for the complete abolition of the property tax was defeated, while in Minnesota the voters rejected a proposed constitutional amendment which would have abolished the property tax for state, though not for local, purposes. Constitutional amend-

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ments, as distinguished from statutory referenda, generally limiting property tax rates, appeared on the ballots in five States. Georgia, Colorado and Oregon defeated such measures. Nevada approved a 50-mill limitation. Washington chose to continue the present 40-mill limit for another two years.

Some few of the measures submitted were designed to exempt from taxation particular classes of property. So, in Utah, Nevada, Arkansas and North Carolina measures were approved which will exempt homesteads from taxation if valued at less than amounts specified in the several laws, ranging from \$1,000 to \$2,500. A similar proposal failed of popular approval in New Mexico. Colorado voted to exempt all property, both personal and real, used for religious, educational or charitable purposes. Louisiana exempted livestock and certain other personal property from taxation.

Income Tax.—North Carolina approved a constitutional amendment which raises the maximum income tax rate from six to ten per cent of the total income. California rejected a proposal to require submission of all measures imposing a tax on personal incomes to popular referendum. Colorado voted to amend its present income tax law.

Sales Tax.—The sales tax was considered by direct vote in five States. An initiated measure in Ohio, instigated by the Governor after the Legislature had refused to submit it, thereupon approved by a large popular majority, prohibits the levy of the sales tax upon food sold for human consumption. Michigan rejected a measure of similar content. In Oregon, a retail sales tax measure, referred by petition, was approved. In Idaho and Mississippi the voters refused to authorize their legislatures to levy a tax on the sale of goods.

Other Tax and Revenue Referenda.—Voters of Colorado approved an amendment substituting for the present *ad valorem* an annual graduated specific ownership tax on automobiles; passed favorably also upon a general taxation amendment

limiting, defining and establishing procedure used in the collection and distribution of public revenue; and favorably again on the establishment of a system of public accounting. California approved a proposition permitting the legislature to provide special relief for districts now overburdened by taxation, also a measure to revise the methods of computing taxes on personal property. North Carolina accepted an amendment which provides for a reclassification of property for assessment purposes. Other measures adopted seem less significant, though an interesting attempt was made through popular petition in California, but failed of approval, to repeal the present legislative act requiring licensing of all retail stores.

SOCIAL SECURITY

Voters of six States signified approval of constitutional changes designed to permit the State to participate in the social security program of the Federal Government. These were Colorado, Florida, Kansas, Louisiana, Oklahoma and South Carolina. In Nevada, Oregon and Washington similar measures were lost. The Oregon amendment, however, if carried, would have resulted in that State's withdrawal from the national security plan. All six of the approved amendments include provision for old age assistance. Kansas, in addition, considered and approved an amendment to facilitate establishment of unemployment compensation. The Louisiana propositions included provisions relating to mothers' and children's aid and welfare, unemployment compensation, and assistance to the blind. South Carolina's amendment empowered the legislature to take steps toward the relief of all destitute individuals in the State. Oklahoma, in addition to the provision for adequate constitutional basis for social security legislation, set up a new public welfare commission for the administrative functions involved. The Colorado amendment is, perhaps, especially significant in the one feature concerning pensions for the aged, that

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ne pension is to be granted as a matter of legal right, and not, as in other States, on the basis of individual need.

Other important social security legislation involving the vote of the people include: the Colorado special constitutional provision for the care of indigent residents of the State who are afflicted with tuberculosis; constitutional amendments in Mississippi providing retirement pensions for firemen, their widows and children, and authorizing also retirement pensions for teachers in the public schools; a Texas measure providing for a teachers' retirement fund, and another authorizing the legislature to provide for workmen's compensation insurance; an Oklahoma amendment giving legislative authorization to provide pensions for police officers; an Arkansas initiated statute approved to allow supply of free textbooks for students in the common schools where a majority of the voters in the particular district concerned may so desire.

JUDICIAL PROCEDURE

Reforms in court procedure commanded the attention of a large number of voters. Arkansas passed an amendment which simplifies the procedure in criminal cases, and which, by apparently reasonable estimates, will reduce by one-third the cost of maintaining the criminal courts. An item in the amendment is the provision giving newspaper writers professional immunity similar to that allowed to ministers, doctors and lawyers. A second Arkansas amendment authorizes, in addition to the grand jury method of indictment, prosecution on the basis of information filed by the prosecuting attorney. The legislature, moreover, is authorized to fix salaries of county attorneys, so taking them off the fee system. The Supreme Court of North Carolina was enlarged, and authorized to sit in divisions. Maryland voters consented to the creation of an additional circuit judgeship. Texas authorized the establishment of a state board of pardons and paroles, making the pardoning power

of the governor, except for treason, subject to the recommendations of the board. Nevada will not allow the waiving of a jury trial at the defendant's request. Colorado will not permit women to sit on juries of that State.

LIQUOR CONTROL

The control of manufacture and sale of alcoholic beverages received the attention of voters of five States. Oklahoma voted by a majority of more than 100,000 to hold with the few States that, legally at least, remain strictly dry. California rejected a measure bestowing local option, and another authorizing the creation of a control commission with complete regulatory and licensing power. Texas authorized the establishment of a state dispensary system with exclusive privilege of selling distilled liquors. North Dakota, in a special election, passed an initiated measure setting up control. In the original State of prohibition, Maine, voters passed upon three propositions: one upon the establishment of state liquor stores, another whether to allow the sale of malt liquors, and a third whether to permit the sale of wine and spiritous liquors. These were submitted to state-wide vote, yet each community was given the power to determine its own position with regard to each of the three proposals. In each case the number of communities which approved the rule exceeded the number opposed.

BOND ISSUES AND PUBLIC INDEBTEDNESS

There were considerably fewer bond issues voted upon in 1936 than in 1935. The largest issue proposed—for the financing of the Los Angeles Pacific Exposition of 1941—was rejected by the voters of California. New York authorized an issue of \$3,000,000 to provide immediate relief for the destitute. North Carolina approved a constitutional provision which prohibits the State from incurring a bonded indebtedness of more than 7½ per cent of the total tax valuation of the State. Louisiana adopted a provision permitting the

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floating of bond issues against anticipated revenues.

BANKS AND CORPORATIONS

Maryland, Ohio, South Dakota, amended their constitutions to relieve stockholders in banking corporations from the double liability of old. Doubtless these measures were prompted by the additional security thus afforded to depositors in such institutions by the Federal Deposit Insurance Corporation. Nebraska voters rejected a similar proposal. Utah rejected a measure which would have imposed the double liability on the stockholders of banks in that State. Wisconsin amended its constitution to forbid to railroad corporations giving passes to public officials or other political personages. The amended constitution of South Dakota denies the county and state governments authority to extend credit to private corporations.

MISCELLANEOUS MEASURES

The question of electrical power and its relation to the public promises to become as dominant an issue in America of the near future as was the railroad question in the past, and much energy is expended to influence the electorate upon this subject. Voters of Washington defeated a plan to provide state control of the production of electrical power.

Other referenda of importance or interest included Montana's approval of an amendment to make way for an 8-hour day in all occupations and industries except agriculture. Voters of California authorized the construction and maintenance of separate penal institutions for women convicted of felonies; they did not favor, however, a measure to permit the support of public art galleries by the State nor to authorize water districts and water conservation districts to acquire stock in corporations controlling waters or water rights. Oklahoma rejected an initiative petition aimed to promote the conservation of water and soil.

Most of the votes were upon constitutional, not statutory, measures. Illustrating further the substance of content of the American state constitutions, it remains illegal for den-tists to advertise in Utah, voters having this year refused to repeal the constitutional provision to that effect; while Rhode Island rejected proposals to make New Year's Day and Columbus Day holidays, Louisiana by a very large majority approved a constitutional amendment to make the birthday of the late Huey P. Long a legal holiday in that State.

STATISTICAL SUMMARY

In all, 184 constitutional and statutory measures were referred to popular vote during 1936. Of that number Louisiana's electorate considered 35 and approved 34. California, with 23 propositions on the ballot, comes second on the list. Of the total number of propositions, 163 were constitutional amendments, while only 21 were statutory referenda. Sixteen of the constitutional questions submitted had been initiated in the electorate, while the remaining 147 had originated in legislatures. Ten of the statutory measures were of popular origin, 11 had been instigated by the legislatures. One hundred and eight of the referred constitutional amendments were approved, six of which were initiated measures. Fifty-five proposed constitutional amendments were rejected, of which number 10 were initiative measures and 45 were originated by legislatures. Of the 11 statutory measures which were approved, five were of popular origin and six were first passed upon by legislatures. Of the 10 defeated statutory proposals, five were initiative petitions and the same number were of legislative origin. Thus, of the total number of approved propositions, 11 were of popular origin, 108 were submitted by legislatures; while of the number rejected, 15 were of popular and 50 of legislative origin.

ELECTORAL LEGISLATION

ELECTORAL LEGISLATION

BY LOUISE OVERACKER

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REGISTRATION

Kentucky passed a new permanent registration act in 1936 applicable to all voters in the State. Registrants must appear in person, the names are filed on separate cards, and the cards must be signed by the voter. Initial registration under the new act took place in August. The elaborate permanent registration law of Illinois is in the form of an amendment to the act of 1885 and applies to all cities, villages and incorporated towns which adopt the provisions of that act. Voters must register in person and sign their registration cards. Provision is made for careful checking of the registration lists, and at the election each voter signs a certificate, the signature on which is compared to that on his registration card. In New York, the use of card indexes for recording registrants was extended to all cities having a population of 500,000 or more and in Virginia such cards may be substituted for permanent books in cities of 60,000 to 100,000. Virginia also made it possible for certain cities and counties to substitute a general registrar for separate registrars in the several districts, and changed slightly the salaries of registrars. Minor changes in New York concern the reports furnished by hotels and boarding-house keepers, used in checking registration lists, and the regulations governing transcripts of party enrollment. South Carolina changed the hours of registration in certain towns and counties.

NOMINATIONS

Kentucky eliminated the second or "run-off" primary provided for in 1935. Hereafter candidates receiving the highest number of votes in the primary will be the nominees of their respective parties. Minor amendments to direct primary laws were made by Mississippi (assessment of cost upon the candidates),

New York (date of the spring primary in 1936), Massachusetts (date of the pre-primary convention), and South Carolina (hours when polls are to be open in certain counties). Massachusetts made a number of unimportant changes affecting nominations at city and town primaries, and provided for a special presidential preference vote in 1936; New York changed slightly the date when an objection to the issuance of a certificate of nomination must be filed; and Virginia required independent candidates to file petitions similar to those required of candidates in party primaries.

ABSENT VOTING

In Massachusetts, absent voting provisions were extended to mariners and persons engaged in fishing. Virginia barred candidates for nomination or election from witnessing absentee ballots and New York made minor changes in the form of application to be made by teachers.

CONDUCT OF ELECTION; CONTEST AND RECOUNT

Virginia substituted affirmative voting for the system of crossing out names of candidates not voted for; Kentucky provided for numbered ballots and amended provisions governing assistance to voters; and New York prohibited the use of the flag of any foreign country or of any State, territory, colony or dominion as a party emblem on the general election ballot. Minor amendments governing voting hours and the use of voting machines were passed by Massachusetts, New York, and Rhode Island. Illinois increased the number of election clerks and regulated their selection more carefully; Kentucky changed the compensation of county boards of election; and New

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Jersey and Virginia amended the laws affecting readjustment of boundaries of election districts. Unimportant changes by Connecticut, Kentucky, New Jersey, New York, South Carolina, and Virginia affected counting and canvassing of votes, contests and recounts, and the meeting of presidential electors.

CORRUPT PRACTICES

A new act in Kentucky protects national and state employees within the State from assessment for political purposes. Mississippi clarified certain provisions of her corrupt practices act.

PARTY ORGANIZATION

Hereafter township committeemen in Illinois will serve four, rather than two-year, terms. New Jersey extended to candidates for county committees the provision already applicable to candidates for public office which permits printing after the name of a candidate a designation, not more than six words in length, of any policy to which he is pledged. Massachusetts exempted candidates for state committee from the necessity of stating in their nominations papers the public offices which they

have held. New Jersey also modified slightly the dates when county committees take office and hold their meetings.

INITIATIVE AND REFERENDUM

No State made any changes in the machinery governing direct legislation but Kentucky made special provision for referendum votes on liquor sales and the adoption of the city manager plan in third class cities; Massachusetts provided for submission of an additional question relative to sale of alcoholic beverages in so-called "package" stores; and Rhode Island authorized popular votes on calling a constitutional convention and declaring certain days legal holidays.

SPECIAL ACTS

Legislation regulating elections in particular cities and towns was passed by Massachusetts (cities of Gardner and Holyoke) and Rhode Island (towns of Barrington, Coventry, Johnston, and Tiverton). New Jersey made important changes in the act regulating the election of boards of education. Special acts governing the primaries in Brookland and Rock Hill were passed by South Carolina.

LAW REFORM

By CLINTON ROGERS WOODRUFF

DIRECTOR OF PUBLIC WELFARE, PHILADELPHIA

CHICAGO COMMITTEE ON PROFESSIONAL ETHICS

The Chicago Bar Association has established a procedure that may appropriately be characterized as a legal Court of Honor. Members who believe they have been the victims of unjust or erroneous public attacks upon their professional integrity may apply to the Committee on Professional Ethics for a consideration of the matter, and that committee may, in its discretion, conduct hearings and render a decision. If the decision is favorable the Committee will bring it to the attention of the persons making the attack and, wherever feasible, an effort will be made

to correct any record involved. This procedure is novel in the legal field.

AMERICAN JUDICATURE SOCIETY MEETING

The annual meeting of the American Judicature Society was held May 6 in Washington. The directors' meeting received a report from its committee on membership, showing that since last October the Society had gained 450 additional members. The depression appears to be a thing of the past for this Society, and it begins a new year with more income and encouragement than ever before in its history. Representative Sam Hobbs of Alabama was among

LAW REFORM

the speakers. His experience as a member of the House Committee on Impeachment was told informally, and led up to his statement that impeachment is now fully recognized to be not a mode of punishment, but one only of involuntary retirement for the good of the service.

That being the case, he recommended a change in procedure, so that instead of having the Senate devote a week or two to an impeachment trial, it should dispose of such matters through a small and competent committee. While the Senate is rarely called upon to devote time to such inquisitions, the proposed change is in line with the more advanced ideas in respect to involuntary retirement of judges, which ideally should be only by a specially competent tribunal. The proposal is of interest because it is novel and comes at a time when the British Parliament has done away with the trial of peers on felony charges, a consequence of Lord de Clifford's insistence upon an historic privilege. This appears to be the first amendment to Magna Charta, which was more an adjustment between crown and peers than a charter of popular rights.

AMERICAN LAW INSTITUTE

The 14th annual meeting of the American Law Institute was held in Washington, D. C., May 6-9. The Council of the Institute submitted a Proposed Final Draft of Restitution and Unjust Enrichment (Quasi-Contracts and Constructive Trusts); also a Proposed Final Draft of the first two volumes of the Restatement of the Law of Property, with a view to having them adopted as Official Restatements. The Council also submitted for criticism and suggestion tentative drafts of the Restatement of the Law of Torts (parts Relating to Misrepresentation and Nondisclosure, and Defamation).

The Council of the Institute, in February, elected George Wharton Pepper of Philadelphia to succeed the late George W. Wickersham as its president. The vice president's post, previously held by Mr. Pepper, was

filled with the election of Charles Morris Howard of Baltimore, and Judge Augustus M. Hand of New York was named an additional member of the Council.

The Institute is an endowed organization founded for scientific research and improvement of the law profession. Elihu Root is honorary president.

Since Jan. 1, 1936, the Research in International Law, conducted since 1927 under the auspices of the faculty of the Harvard Law School, has been affiliated with the American Law Institute. This important event in the history of both bodies will unquestionably make possible a still greater contribution by both groups to the modernization of all law. It is altogether fitting, and a sign of the times, that the labors of the American Law Institute in restating the municipal common law should now be supplemented and expanded by the efforts of a group of jurists and scholars in codifying, so far as practicable, the law of nations. World Court Justice Manley O. Hudson, also of the Harvard Law School, has been the Director of Research in International Law.

UNIFORMITY IN STATE LAWS

The National Conference of Commissioners on Uniform State Laws held its 46th annual meeting at Boston, Mass., Aug. 17-22. This meeting annually precedes the meeting of the American Bar Association and is composed of representatives appointed by the Governors or the executive authority in each of the States and Territories. Forty States were represented with 85 commissioners in attendance. It approved an enlargement of the scope and purposes of the conference through an amendment to its constitution so that its work may cover the subject matter of interstate compacts and secure uniform judicial interpretation of uniform acts including cooperation with the American Law Institute in its work concerning the restatement of the law.

The conference finally adopted and recommended for enactment by the

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legislatures of the various States, the following uniform acts: 1. uniform trustees accounting act concerned with uniform methods of accounting; 2. uniform extradition act for criminals; 3. uniform act for securing the attendance of foreign witnesses; 4. uniform agricultural cooperative marketing act; 5. uniform evidence act providing for introduction of business records; 6. uniform composite reports act providing for their introduction in evidence; 7. uniform officials record act providing for their use in evidence; and 8. uniform act covering the judicial notice to be taken of foreign laws.

AMERICAN BAR ASSOCIATION MEETING

The 59th annual meeting of the American Bar Association was held in Boston, Aug. 24-29. There were 3,267 lawyers present. Among the important features were adoption of a new constitution reorganizing the Association; a discussion of the press, radio and the Bar; a declaration against depriving the Supreme Court of its power to declare laws unconstitutional; sharp debates on various phases of the New Deal.

LAW SCHOOLS AND STUDENTS

A decrease in the number of law schools but an increase of four per cent in the number of law students over 1934 was announced in the *Annual Review of Legal Education*, published in 1935 for the first time by the American Bar Association. In 1934 The Carnegie Foundation for the Advancement of Teaching announced that it would discontinue its *Annual Review* on this subject, but stated that it would be glad to extend full cooperation "if the national organizations professionally concerned with legal education desire that this or a similar annual reference work should continue to be published, and if they agree as to which of them can best take up the task, or as to the establishment of a joint agency for this purpose."

The attendance figures showed a total of approximately 42,000, an increase of some 1,600 students over the preceding year. The low in law

school attendance during the last ten years was in 1932, and there has been a continuous increase since that time. With financial conditions improving and the certainty of a second-year class considerably larger than that now in school, the outlook is for more students next year. In view of the poll taken by the Philadelphia Bar Association, which resulted in an unofficial vote of 729 to 1,031 in favor of a definite limitation on admission, and of the discussion of an overcrowded bar which continues in various parts of the country, this trend is of considerable interest.

PROPOSED FEDERAL ADMINISTRATIVE COURT

Creation of a U. S. administrative court (see *THE AMERICAN YEAR BOOK*, 1935) has been approved by the Executive Committee of the American Bar Association which authorized its Administrative Law Committee to draft a bill for that purpose to be introduced in Congress, according to information. The proposed tribunal would assume the judicial functions of certain administrative and judicial bodies now existing. A hint that the proposal at a later date be extended to include similar court powers now possessed by such bodies as the Interstate Commerce Commission, Federal Trade Commission, Federal Communications Commission, Federal Securities and Exchange Commission, and like bureaus is found in the statement of the Administrative Law Committee report to the Executive Committee. The report states that it is "impolitic to establish more than a nucleus of such a court" at the present time, but that it was "highly important from the outset that the court should function efficiently and be able to demonstrate its advantages."

A second part of the approved report urged that a bill be drafted and passed by Congress requiring the filing and registration in a central place of all executive fiats having the force of law. At its annual meeting in 1934, the American Bar Association pointed out the necessity of such action. In line with this suggestion the White House announced that ad-

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ministrative rulings will be printed regularly. The committee extends the requirement of publication by requiring "exercises of legislative power by

executive or administrative officials" to be registered and published before becoming effective except in the case of emergency matters.

COUNTY AND RURAL GOVERNMENT

BY ORREN C. HORMELL

PROFESSOR, BOWDOIN COLLEGE

INCREASED PUBLIC INTEREST

Although few legislatures met in regular session during 1936, public attention was centered on county and local government more widely than ever before on account of the widespread demand for local government cooperation in putting into effect the Federal and state relief and welfare programs. Furthermore there appeared during the year an increasing tendency to give the problems of county and rural local government the attention which they deserve on account of a growing tax-mindedness on the part of the voters with an accompanying demand for increased efficiency in local government.

Public interest in local government was stimulated by the Round Table on Local Government held by the Institute of Public Affairs, University of Virginia, July, 1936. The subjects covered included: Problems of County Government Relating to the South, County Consolidation in the South, County Manager Plan in Operation in Virginia, County Home Rule in Ohio, and County Home Rule in New York. The *National Municipal Review* furthered the cause of county government by devoting an entire issue (October, 1936) to county government. The Virginia Commission on County Government submitted to the Governor and General Assembly another excellent report on "Progress in County Government and County Consolidation." Cornell University, through its College of Agriculture, published excellent bulletins on "Rural Government in New York," by M. P. Catherwood and "Local Government in Tompkins County,

New York," by T. N. Hurd. The University of Illinois, through its Bureau of Business Research, published "Costs and Services of Local Government in Selected Illinois Counties," by H. K. Allen.

What may be accomplished by a County Planning Survey Committee is admirably shown by "The Westchester County Planning Survey," published in 1936 by the Westchester County Advisory Committee on County Planning with Wayne D. Heydecker, planning consultant.

COUNTY CONSOLIDATION

County consolidation continued to receive scattering attention during 1936. The November election saw city-county consolidation defeated by the electorate in Birmingham, Ala., but victorious in Key West, Fla. The Kentucky Legislature passed the most noteworthy city-county consolidation legislation enacted in 1936. The act submits to the voters of Kentucky, November, 1937, an amendment to the constitution providing that "by uniform laws the general assembly is empowered to reorganize county and city governments into single county-wide governmental units or into a single county-wide group of interrelated and interdependent units."

COUNTY UNIT FOR RELIEF ADMINISTRATION

New Jersey has used effectively County Welfare Boards in the administration of the Old Age Assistance program. The New Jersey system has demonstrated the possibility of keeping costs down and of "combating the tendency for applicants to slump into public dependency

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simply because a 'pension' or 'relief' is available." In Wisconsin 42 counties out of the total of 52 furnished the administrative agencies for carrying out the Federal and state relief plan.

STATE CONTROL OF COUNTIES AND TOWNSHIPS

Economic and social conditions arising from the depression and from the increasing demand for additional governmental services tended to increase state control over counties and townships during 1936. Texas has brought under state control the administration of education and highways. In Michigan a five-year plan was completed to absorb township highways into county road systems. The township in Michigan is being considered more and more a source of unwarranted expense.

HOME RULE

New York.—The Home Rule Constitutional Amendment (see *THE AMERICAN YEAR BOOK*, 1935, p. 155) adopted by the electorate Nov. 5, 1935, went into effect Jan. 1, 1936. In accordance with the provision of the amendment, two county charters were submitted for approval of the Legislature in 1936; one for Erie and the other for Nassau County. The Nassau charter only was approved by the Legislature and adopted by the electorate at a county referendum Nov. 3, 1936.

Possible improvements under the 1935 Constitutional Amendment (as pointed out by T. N. Hurd in Cornell University Agricultural Experiment Station *Bulletin* No. 657, August, 1936): the transfer of town and county protection functions to the state police; the collection of all taxes by the county; the installment payment of taxes; a county board of assessment and review; the assessment of corporation and special-franchise property by the State Tax Commission; the budget system for all units; the abolition of the fee system; the county treasurer to act as custodian of funds of all local units; and the transfer of certain town functions to the county. Not

all of these proposals would be accepted in all counties, but the optional forms of local government should be broad enough to make it possible for a county to select the form of government believed to be best suited to its needs.

Nassau County Charter.—The Nassau County Charter deserves special consideration in any summary of County Government for 1936. The charter was drawn up under the provisions of the Fearon Amendment to the State Constitution adopted in November, 1935. The most important features of the charter are: (1) better County Home Rule by taking away from the State Legislature the right to interfere with many of the county local laws without a referendum of the electorate of the county; (2) a county executive, elected by the county electorate at large, who with confirmation by the Board of Supervisors appoints heads of departments and acts as the administrative head of the county; (3) Board of Supervisors continued as the legislative body but relieved of its administrative duties; (4) a modern budget system and a County Planning Department; (5) County Comptroller entrusted with the supervision of accounts and auditing and of the financial affairs of the county in general; (6) new department of assessment entrusted with the duty of assessing all real property in the county to the end that the present confusion and inequalities in assessment may be removed; (7) The several welfare agencies in the county consolidated in the interest of efficiency and economy; (8) a department of public works which, in addition to the usual engineering functions, has control and supervision of county water supply, drainage, and sewage and garbage disposal. Elections under the charter will be held in November, 1937, and the charter will go into effect Jan. 1, 1938.

Ohio Home Rule Charter.—The Home Rule Charter of Cuyahoga County (Cleveland), which received a favorable county-wide vote in the November, 1935 election, was declared invalid by the Ohio Supreme

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Court Feb. 26, 1936 on the ground that it did not receive the "four-hurdle" majorities required for a charter vesting only municipal powers in the county. The charter lacked a majority in the county outside Cleveland and in 48 of the municipalities and townships in the county. Although it was specifically stated in the charter that "nothing contained in this charter shall be construed to vest in the county any municipal powers which would require its approval by special majorities set forth" in the Constitution, the court held that the charter did vest in the county certain municipal powers including the power to enact ordinances, establish a police department, make use of the initiative and referendum, and set up a civil service commission. It now appears that until further legislation or constitutional amendments have been secured Cleveland and Cuyahoga County will be forced to secure constitutional majorities in all four classes of districts before a county charter of the 1935 type can be adopted.

COUNTY MANAGER PLAN IN VIRGINIA

The county executive type plan adopted by Albemarle County (see *THE AMERICAN YEAR BOOK* 1934, p. 130, 1935, p. 156) continued to operate successfully with the county executive heading the department of finance in addition to his duties as supervisor of all departments and of the purchase and distribution of supplies.

Henrico County (see *THE AMERICAN YEAR BOOK*, 1934, p. 130, 1935, p. 156), with the manager system, has been able to retain its share of home rule against the encroachment of the State upon county functions in the counties having the traditional form of government. Notable achievements in government efficiency in Henrico County include: establishing a Public Welfare Department under a full-time trained social worker; restoring to a local county health department the exercise of the county health functions which had been previously taken over by the State; creating a county unit road

system and the abolition of the four-road districts; installing a "tax budget" plan of paying taxes by installments; setting up a system of centralized purchasing of supplies including school supplies, and effecting a centralized control over motor equipment resulting in a lower cost of liability insurance.

Arlington County reports many noteworthy achievements from the operation of its manager plan. Outstanding among such achievements are: wiped out a deficit of more than a quarter of a million dollars, reestablished debt service fund and restored county credit; installed new services including a county-wide system of collecting garbage and refuse, a county-wide sewerage system; installed an effective accounting and control system, system of financial planning through the executive budget; and effected the coordination of departments.

COUNTY MANAGER MOVEMENT IN NEBRASKA

The county manager movement in Nebraska received a temporary setback from an adverse Supreme Court decision, March 6, 1936 (*State Ex Rel O'Connor v. Tusa*). The court held that "an Act relating to county government, to provide for the adoption of the managerial form of county government, and to provide penalties for the violation thereof" (1935) was unconstitutional, on several points, which included the opinion that the title was insufficient and that the manager, being an officer, could not be appointed, since the constitution provides for the election of county officers.

THE MERIT SYSTEM

Henrico County, Virginia, leads the way in selecting better personnel and establishing a career service by the use of the merit system in the selection, promotion, and in-service training of the county administrative agents and employees. The policy of the County Manager and Board of Supervisors relative to the merit system (reported in the *National Municipal Review*, Sept. 1936, p. 543) is as follows: (1) the selection of em-

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ployees upon the "sole basis of the applicant's qualification for the particular work, but that preference will be given to county residents when the qualifications of two or more applicants are equally satisfactory"; (2) security of position, as long as service is satisfactory; and (3) a wage scale based upon character of service performed. A personnel officer is to be created with duties as follows: (1) to "investigate the character, experience, and qualifications of all applicants for employment"; (2) to build up a list of eligible persons from which "employees shall be chosen, if possible"; (3) to classify the service performed by employees and recommend fair rates of pay; (4) to investigate charges against an employee and to recommend to the manager the proper action to be taken; (5) to keep an efficiency record for each employee; and (6) to stimulate in-service training that will tend to improve efficiency and morale of the public service.

REGIONAL AND LOCAL PLANNING

Tennessee has taken the lead in the creation of "sub-regional" planning organizations, three of which, following more or less conventional metropolitan lines, are to determine the development of Memphis, Nashville, and Knoxville. The fourth, the Hamilton County "regional" planning commission, is designed to care for the land use problems in the area of the Chickamauga Dam site near Chattanooga. The fifth, located in West Tennessee, covers an area of 4,000 square miles and was created to control and direct the planning for the watersheds of the Obion and Forked Deer Rivers. The sixth planning body is located in the area comprising the five northeastern counties of Tennessee.

What is being done by way of county planning was strikingly set forth in the publication containing the Westchester County N. Y. Planning Survey—*A Report of Progress*, June 1, 1934 to April 15, 1936.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN AUTOMOBILE ASSOCIATION, 17th St. and Pennsylvania Ave., Washington, D. C.

AMERICAN JUDICATURE SOCIETY, Ann Arbor, Mich.

AMERICAN LEGISLATOR'S ASSN., Drexel Avenue and 58th St., Chicago, Ill.

AMERICAN SOCIETY OF PLANNING OFFICIALS, 850 E. 58th St., Chicago.

CIVIL SERVICE FORUM, 2 Lafayette Street, New York City.

COMMITTEE ON PUBLIC ADMINISTRATION, Social Science Research Council, 306 E. 35th St., New York City.

GOVERNMENTAL RESEARCH ASSOCIATION, 850 E. 58th St., Chicago.

NATIONAL ASSN. FOR CONSTITUTIONAL GOVERNMENT, 716 Colorado Bldg., Washington, D. C.

NATIONAL CIVIL SERVICE REFORM LEAGUE, 519 Fifth Ave., New York City.

NATIONAL MUNICIPAL LEAGUE, 309 E. 34th St., New York City.

PUBLIC ADMINISTRATION CLEARING HOUSE, 850 E. 58th St., Chicago.

THE COUNCIL OF STATE GOVERNMENTS, Drexel Avenue and 58th Street, Chicago, Ill.

DIVISION V

MUNICIPAL GOVERNMENT

NEW YORK CITY AFFAIRS

BY WALLACE S. SAYRE

ASSISTANT PROFESSOR, NEW YORK UNIVERSITY

CHARTER REVISION

The most important change in New York City government during 1936 was the successful revision of the charter of the city after more than 30 years of unsuccessful efforts to modify the draft of 1901. The agitation for change in the governmental structure of the city was revived by the disclosures of the Seabury investigation in 1931-32. Charter revision became an important issue in the election of 1933, and the election of Mayor La Guardia and a Fusion Board of Estimate strengthened the movement. The legislature, after long controversy, created a charter commission on May 21, 1934 (Chapter 689). This commission, with Alfred E. Smith as chairman and Samuel Seabury as vice-chairman, was so torn by internal dissension that on Aug. 2 Chairman Smith, Seabury and other prominent members resigned, recommending dissolution of the commission and the creation of a small commission appointed by the Mayor or by the Governor and the Mayor. The legislature accepted the recommendation and on Aug. 18 authorized the appointment by the Mayor of a commission of nine members to draft a charter for submission to the voters of the city (Chapter 867).

Mayor La Guardia, on Jan. 12, 1935, appointed as the New York City Charter Revision Commission: Thomas D. Thacher, chairman; S. John Block, Mrs. William P. Earle, Jr., Frederick L. Hackenbourg, Charles E. Hughes, Jr., Joseph D. McGoldrick, Charles G. Meyer, Thomas I.

Parkinson and Joseph M. Proskauer. Joseph P. Chamberlain was appointed counsel and secretary, Laurence A. Tanzer, associate counsel, and Mrs. Norman S. Goetz, assistant secretary. The commission began its work in February, 1935 and thereafter developed its proposals by public and private hearings, by conferences with responsible officers and civil service employees of the city, and by executive sessions of the whole commission. On April 27, 1936, the commission submitted a proposed draft of the new charter to the public. Public hearings were held during May and June in all the boroughs, after which the commission resumed consideration of its draft. On Aug. 17 the commission filed with the City Clerk its final draft with instructions for its submission to the voters in the general election of Nov. 3.

A Citizens' Charter Campaign Committee was organized for a city wide campaign for the adoption of the charter, and a Proportional Representation Campaign Committee was formed to advocate acceptance of the alternative proposal in the Commission's draft providing for selection of the Council by proportional representation. In the campaign which followed, the opposition to the proposed charter, centered mainly in the Democratic party organizations, relied heavily upon legal attempts to invalidate the proposal by court action. When these failed, a Home Rule League Against the Proposed Charter was hastily organ-

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ized, but on Nov. 3 the voters of the city approved both the proposed charter and the proposal for P. R. The vote was as follows:

	Charter		Proportional Representation	
	Yes	No	Yes	No
Brooklyn.....	351,962	180,072	340,007	175,673
Manhattan.....	219,070	139,595	207,910	131,961
The Bronx.....	191,414	122,663	192,316	104,887
Queens.....	176,618	130,020	170,355	114,153
Richmond.....	13,455	30,722	12,598	28,543
Total.....	952,519	603,072	923,186	555,217

NATURE OF THE NEW CHARTER

Fundamental Changes.—The new charter, which goes into effect Jan. 1, 1938 (certain financial provisions and the election provisions go into effect in 1937), preserves the general outlines of the present government but makes important changes in several fields. One of the most striking alterations is the substitution of a "short form" charter for the lengthy, detailed existing charter. This change was made possible by provision for an administrative code which will include the body of routine administrative regulations. This code is now being assembled by a Board of Statutory Consolidation which will submit its work, when completed, to the legislature for approval and enactment. The most fundamental change in the government of the city is the adoption of the Hare system of proportional representation for the election of the Council which replaces the Board of Aldermen. The councilmen will be elected by boroughs, one for each 75,000 votes cast. This method will give the city a Council of approximately 35 members, representing the boroughs, the parties and the independent groups in proportion to their voting strength.

Political Results.—The political results will be immediate and profound. There will be a pronounced shift of power from Manhattan (which is now greatly over-represented in the Board of Aldermen) to the outlying boroughs, and there will be a marked stimulation of political independency by the breaking of the monopoly which the

dominant party organization has had over seats in the aldermanic chamber. Of similar political importance is the provision that the voters of the city may hereafter amend the charter by popular petition (50,000 signatures are required) and popular referendum. The majority party cannot continue to use the local legislature or the state legislature as "bottle-neck" to prevent changes in the charter which are desired by a majority of the electorate.

Administration.—In administrative matters, the outstanding change is the provision for a City Planning Commission to consist of the Chief Engineer and six members to be appointed by the Mayor for eight-year overlapping terms. This Commission is charged with the preparation of a master plan for the city and the preparation of a six-year capital program and an annual capital budget. In these matters the Commission can be overruled only by a three-fourths vote of the Board of Estimate. For the first time the city, long recognized as in need of careful planning, acquires a planning body with adequate, even unusual, powers. In consolidating departments, which has been the central demand of the reform groups, the Commission proceeded cautiously. The important modifications in this respect affect the borough departments of public works and of buildings whose functions are, in the main, transferred to two new city-wide departments—the Department of Public Works, with which public works functions of the Sanitation and Plant and Structures departments are also consoli-

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dated, and the Department of Housing and Buildings, with which the Tenement House department is also combined.

Financial Provisions.—In financial administration, the new charter transforms the Comptroller (who remains an elective officer) from chief financial officer into chief auditor, while the newly created Treasurer, appointed by the Mayor, becomes the head of the finance department. The new charter also revives, in less abrupt form, the pay-as-you-go plan of 1916 by substituting serial bonds for term bonds and by stepping up the proportion to be financed currently two per cent each year. Docks, water supply, subways, bridges and tunnels, and acquisition of real property are exempt from this requirement, but there will be a gradual realization of the pay-as-you-go objective in the remainder of the capital program. The new charter also attempts to place the city's annual operations upon a cash basis by establishing a reserve fund which will, within 15 years, equal 30 per cent of the tax levy and which will make unnecessary the present heavy borrowing for budgetary purposes. The city's confused bond system is simplified by reducing the number of types of bonds and by clarifying the terminology.

Official Powers.—The Mayor remains the keystone of the government of the city, acquiring new powers over finance, public works and buildings. The Board of Estimate retains its superior powers over the Council, but loses some powers to the City Planning Commission. The borough presidents lose control over major public works and building reg-

ulations, but they retain power over assessable improvements as well as their powerful position in the Board of Estimate. "Borough autonomy," in the sense that it has been a protest against Manhattan hegemony, is recognized by the greater power which the outlying boroughs acquire in the Council under proportional representation. The passing of Tammany, already ordained by the movement of population out of Manhattan, is accelerated by the new charter.

CITY FINANCES IN 1936

Taxes and Assessments.—This department continued its study of public utility companies' properties in the city. Begun late in 1935, with a corps of engineers expert in utility valuation, the study has resulted in the addition of \$300,000,000 to the assessed valuation of such properties. Except for the Interstate Commerce Commission's valuation of railroad properties, the study is the largest undertaking of its kind in the United States. The department has also reorganized and enlarged its research bureau and will hereafter go more exhaustively into real estate trends in every district of the city. A Tri-Departmental Settlement Board, on which sit representatives of Corporation Counsel, Finance Department, Taxes and Assessments, has been created to expedite by arbitration with property owners the writs of certiorari concerning assessed valuation.

Revenues.—The Department of Finance reported continued improvement in the city's financial status in 1936. The city sales tax produced a banner yield of \$45,000,000. The following comparative tables show the progress of city revenues:

TAX LEVIES AND COLLECTIONS

	1934	1935	1936
Total tax collections.....	\$579,827,927.35	\$629,155,396.38	\$631,441,217.15
Tax levy.....	472,544,112.15	469,370,548.00	453,546,218.91
Current tax collections.....	369,980,567.76	391,657,981.57	398,431,460.12
Collections on arrears.....	114,981,255.20	93,373,526.36	68,501,220.19
State income tax.....	5,634,634.66	6,351,778.93	7,493,877.28
Bank tax.....	2,534,343.30	3,160,635.63	2,679,671.56
Excise tax.....	7,870,850.75	10,127,032.39	10,490,910.30

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OUTSTANDING SECURITIES AND UNCOLLECTED TAXES

	1935	1936
Securities outstanding against taxes.....	\$104,140,500.00	\$ 80,350,000.00
Uncollected taxes.....	183,392,724.66	166,126,144.00

Purchases.—The Department of Purchase, which was established as a centralized purchasing agency on Jan. 1, 1934, has continued its work of establishing an integrated purchasing system for the city, standardizing commodities (the city buys 60,000 separate commodities), and perfecting a central storage system with perpetual inventory. In 1936, Commissioner Forbes reduced the number of storehouses from 74 to 48, reduced the physical inventory by \$358,000, and established a central trucking service which saved \$200,000 in trucking costs. A salvage division was also created in 1936 to handle disposal of scrap and waste material; the division produced a surplus of \$250,000. The transfer of surplus supplies between departments totalled \$118,000. Several hundred antiquated specifications were revised.

PERSONNEL ADMINISTRATION

The Municipal Civil Service Commission established during 1936 a new service-rating system under the leadership of Commissioner Ordway under which 21,084 competitive employees were rated under objective criteria, the largest previous number for a rating period being 819. The Commission also proceeded with its reclassification program, consolidating 23 titles into five, transferring 541 employees to competitive class, and practically completing plans for the transfer of 4,000 non-competitive employees to the competitive class. The recruitment process was further improved by the greater use of objective testing methods, and the oral examination system particularly was overhauled. The Commission also continued its interest in the organization of career ladders, adding administrative assistant to the promotion opportunities for the clerical service.

LAW

The Corporation Counsel and his staff in 1936 demonstrated that the department is the largest single law office in the world by disposing of 14,449 actions and proceedings. The actions affecting condemnation of land were among the most important. In this field, the Corporation Counsel won a new trial in the Bergen Beach award of 1932 and in other cases announced a saving of \$7,000,000. The office also succeeded, in 1936, in practically clearing up the accumulation of actions which were pending in 1934.

PUBLIC RELIEF

Approximately 1,300,000 needy men, women and children received money for food, rent, clothing and other necessities from the Emergency Relief Bureau sometime during 1936. On Jan. 1, 1937, there were 177,545 cases, representing approximately 516,656 individuals or 7 per cent of the total city population, on the relief rolls. On Jan. 1, 1936, there were 172,672 cases receiving relief. New York City spent for the care of these persons in 1936 \$84,810,000 or \$13,524,000 less than in 1935. The total Emergency Relief Bureau cost, which includes school lunches, free milk, and administrative costs, was \$108,800,000 in 1936 or \$17,690,000 less than in 1935.

The year saw a rapid expansion and a slower contraction of work relief in New York City. In January, the number of persons employed by the New York City Works Progress Administration unit was 245,338. At the close of December, the number had been reduced to 199,196. With their dependents, these persons represent a total of 581,500 individuals who must be added to the number of the home relief rolls if the complete picture of unemployment in the city is to be seen.

NEW YORK CITY AFFAIRS

HEALTH

Commissioner of Health John L. Rice pushed forward in 1936 his program for District Health Offices, the first being opened in the Harlem district. The program involves the division of the city into health districts, each with a central office facilitating a unified health service for the area. The Department also reported in 1936 that diphtheria deaths had been reduced to one half the 1935 total and that infant mortality had reached a new low record.

During 1936 one person out of eight in New York City received medical aid through the Department of Hospitals, a record year for the Department which required 150 additional doctors and 250 additional nurses, bringing their respective totals to more than 5,000 and 6,000. Six hundred new beds were added. The Department was able to concentrate all therapeutic treatments of cancer under one roof, to establish a research division of chronic diseases, and to enlist a notable staff of scientists and technicians to improve the treatment of chronic diseases. Commissioner Goldwater began also the construction of a central Nurses' Home and of a new Kings County Hospital unit, and 250 WPA alterations and repair projects were completed. The new Hospital Council approved a \$60,000,000 building program for the department.

HOUSING

On Jan. 3, 1936, ground was broken in the Williamsburg section of Brooklyn for what will be the largest public housing project in the United States. The project will include a school, a one-block playground, and apartments for 1,463 families. A few weeks later ground was broken at 153rd Street and Macombs Place for Harlem River Houses which will provide 574 apartments for Negroes on a four-block site. Both these projects were practically complete in superstructure at the end of 1936. The New York City Housing Authority will operate the projects when they are completed by the Federal

Emergency Administration of Public Works.

The powers of the Tenement House department were greatly increased by legislation in 1936 with reference to fire-retarding of hallways and separate toilets for each family in all multiple dwellings. During the year 1,000 buildings complied with these requirements on order of the Department. The shrinkage of low-rent apartments, however, seemed likely to force a moratorium at the end of the year.

PARKS

New York City's park facilities continued to expand during 1937 under the program of Commissioner Moses. At the end of 1936 there were 18,184 acres of park, 274 playgrounds, 12 swimming pools, 10 18-hole golf courses and 567 tennis courts, as compared with 14,827 acres of park, 119 playgrounds, two swimming pools, five 18-hole and three 9-hole golf courses, and 355 tennis courts at the beginning of 1934. Free recreational facilities will have been trebled by July 1, 1937. Forty-seven new park properties, 25 of which are new playgrounds in underprivileged districts, were acquired during the year. Eighty new playgrounds were opened. The most ambitious project was the municipal stadium on Randall's Island which seats 35,000. Other improvements included the reclaiming of 20 acres along the Hudson River, the reconstruction of Jacob Riis park in Queens, the Orchard Beach development in the Bronx, 10 new swimming pools, and the opening of new parkway arteries—the Henry Hudson, the Grand Central, the Interborough, and the Shore Road. One of the larger tasks of the year, which will be continued in 1937, is the preparation of Flushing Meadow Park in Queens for the site of the 1939 World's Fair.

WATER SUPPLY

The completion of City Tunnel No. 2, the new 17-foot pressure tunnel which extends for 20 miles from Hillview Reservoir in Yonkers through the Bronx and Queens to

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Hamilton Avenue, Brooklyn, was the major accomplishment by the Board of Water Supply and the Department of Water Supply, Gas and Electricity in 1936. First steps were begun on the far-reaching Delaware water supply project, estimated to cost \$273,000,000 in 12 years, when shafts were sunk for the construction of reservoirs on the Neversink River and Rondout Creek. Consumption of water in the city shows a steady increase, the 1936 daily average being 918,000,000 gallons. The Department in 1936 undertook a campaign to eliminate unnecessary waste of water; 400,000 leaky plumbing fixtures were discovered.

SANITATION

Construction of sewage-treatment plants and incinerators were the main concern of the Sanitation Department during 1936. The Ward's Island sewage plant, begun in 1936, will dispose of one-fifth of the total sewage of the city. The Coney Island plant was completed in 1936. Work has begun in Manhattan on the world's largest incinerator which will have an adjoining garage for 300 trucks. A modern incinerator was completed at Flushing.

TRANSPORTATION

Unification.—Continuing their efforts to develop a plan for the unification of the city subways, the city's negotiators, Judge Samuel Seabury and Chamberlain A. A. Berle, Jr., submitted their definitive plan to the Transit Commission early in 1936. The definitive plan embodies the main features of the tentative agreement published in 1935, but it has not been well received by the Transit Commission which must, under present law, approve it. The Transit Commission held, in the fall of 1936, a number of hearings on the plan, which served mainly to reveal its hostility to the Seabury-Berle plan but produced no alternatives. The end of 1936 thus saw a continuance of the 15-year stalemate on unification.

Surface Transit.—Buses continued to replace trolley cars on the city streets. During 1936, 330 trolley

cars were replaced by 442 buses. Modernization of buses also progressed, the most important change being 100 new buses placed in operation by the Fifth Avenue line.

Independent Subway.—The city-owned and -operated subway added 12 miles of track in 1936, along Houston and Essex streets in Manhattan and along Queens Boulevard in Queens. The total number of passengers in 1936 was 263,000,000, an increase of 48,000,000 over 1935. The system now employs more than 6,000 persons. Construction of the Sixth Avenue line began in 1936 with the letting of four contracts upon competitive bids totalling \$25,000,000. The project will require four years for completion.

CORRECTION

The most significant changes in the Department of Correction during 1936 were the abandonment of the 100-year old Penitentiary and the 85-year old Workhouse on Welfare Island, and the full occupancy of the modern city Penitentiary on Riker's Island. The new penitentiary has a warden who is a university graduate and an expert in vocational education with extensive prison administration experience. A modern prison program is being developed for the 2,200 prisoners.

PUBLIC SAFETY

Police.—While reporting a decrease of two per cent in major crimes during 1936, the Police Department gave its continued attention to problems of traffic and traffic safety. The safety campaign of the Department was intensified during the year, resulting in the following reductions in traffic casualties: accidents, 6.4 per cent; fatalities, 12.3 per cent; injuries, 6.6 per cent. A new traffic code was developed by the Department during 1936; it has been adopted and will go into effect in 1937.

Fire.—The approval of the three-platoon system by the voters on Nov. 3 will add 4,500 officers and men to the Fire Department during the next two years.

FUNCTIONS AND TYPES OF MUNICIPAL GOVERNMENT

FUNCTIONS AND TYPES OF MUNICIPAL GOVERNMENT

By CLINTON ROGERS WOODRUFF

DIRECTOR OF PUBLIC WELFARE, PHILADELPHIA

GROWTH IN CITY MANAGER GOVERNMENT

For the first time the number of cities operating under a city manager exceeds the number whose affairs are directed by a commission due to the fact that 11 cities changed to that form in 1935. This change is only one of the numerous ones occurring in the governmental habits of cities as recorded in the 1936 *Municipal Year Book*, published by the International City Managers' Association.

Governmental data on the 960 cities with 10,000 or more population show that at present more than half of them operate under the mayor-council plan. The council-manager cities, operated through a city manager, number 462, an increase of 15 during 1935. The town meeting continues to function as the form of government in 36 New England cities and in one city in New Jersey. Cities under the mayor-council plan most often have seven persons in the legislative chairs. Under the commission and the council-manager forms of government, the number of members is most frequently five.

An analysis of the voting in municipal elections in 760 of these cities shows that only a little more than two-fifths of the population over 21 participated in the last council election. The remainder refrained because of lack of citizenship, lack of interest, sickness, or some other reason, principally weather. This number is 14 per cent under the approximate percentage of the total population over 21 in the United States which voted in the presidential election of 1932. The proportion of registered voters to the total population eligible to vote—62 per cent—is slightly higher than the figure reported last year.

During the year 1935-6 there were 70 manager appointments. Of these, 48 (69 per cent) had had previous public experience and 42 of the 48

were appointed directly from other public positions. Six city managers received promotions to another city and eight former city managers returned to active service in the profession.

Twenty-one managers appointed were out-of-town men. This amounted to 30 per cent of all appointments as compared with 33 per cent in 1934, 17 per cent in 1933, 28 per cent in 1932, 41 per cent in 1931, and 44 per cent in 1930. Six of the 12 cities which appointed their first managers in 1935 went outside the city, three of them selecting experienced city managers. Of the 101 cities and counties in which the council-manager plan was made effective some time during the years 1929 to 1935 inclusive, 69 (68 per cent) appointed out-of-town men as their first managers.

The average length of service of the 449 city managers holding office at the end of 1935 was six years and two months, including all cities served, representing an increase of two years and ten months since 1925 and of one year and three months since 1930. Of these city managers, 90 (20 per cent), have served less than two years, 202, or 45 per cent, have served six years or more including all cities served. Almost one-fourth of all managers in office at the end of 1935 had been managing cities for ten years or more. A comparison with previous periods shows that the percentage of city managers with a total service of three years or more increased from 48 per cent in 1925, to 61 per cent in 1930, and to 69 per cent in 1935.

Council-manager Cities during the Depression, issued by the National Municipal League, is a study of how libraries have fared under the council-manager plan since 1929. Other municipal services, such as police, public health, and recreation are taken up and comparisons drawn

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with conditions typical in non-manager cities during the same depression period. It is pointed out that in 1933 library salaries in non-manager cities had dropped 1.2 per cent since 1929, whereas in the manager cities they had risen 14.8 per cent. Furthermore, "the manager cities cut library budgets 8.6 per cent less than the non-manager cities, and at the end of four years of depression were still managing to reserve for libraries more than the non-manager cities were allotting them before hard times set in."

INCREASE IN MUNICIPAL EMPLOYEES

Every thousand persons in cities of the United States have 9.2 public servants working for them in the city hall at an average salary of \$1,709 a year according to the *Municipal Year Book* which completed the first known direct count of municipal employees ever made. These figures do not, however, include employees of the schools and workers on municipal projects financed by the state and Federal governments.

The number of employees shows a greater increase with the increase of the size of the city, indicating that municipal expenditures tend to increase faster than the increase in population, and that municipal government is an "industry" of increasing costs. The number of employees as per 1,000 persons is lowest in cities in the lower population brackets—30,000 to 100,000. Here the ratio is 7 to 5. It rises steadily to 10 to 5 in cities over 500,000.

The average salary for municipal employees shows a direct relation to the size of the city, the average for cities over 500,000 exceeding that for the smaller cities. Higher cost of living, requirement of a greater degree of competence in certain positions, and the greater proportion of supervisory to routine positions are possible reasons for larger salaries in the bigger cities.

The salary average of \$1,709 on municipal jobs compares with the \$1,827 average reported for Federal employees in the executive depart-

ments in 1933, but is higher than the average of \$1,417 for public school teachers in 1932. Average salaries for employees of municipal fire departments in cities over 30,000 population have been reported by the Commission of Inquiry on Public Service Personnel as \$2,324 in 1932 and for employees of municipal police department as \$2,299, a much higher wage than that of municipal employees as a whole.

Of the cities reporting, only 14, or 5.6 per cent, have not cut salaries at all during the five-year period since 1930. Of 238 cities which reduced expenditures for wages, 19 have made full restoration, 91 have made partial restoration, and 128 have made no restoration. The size of cuts ranged from 3 per cent for certain employees in San Francisco and Tucson, Ariz., to 50 per cent for a group of employees in Macon, Ga.

STATE LEAGUES OF MUNICIPALITIES

According to a report made by the American Municipal Association, 6,187 local governments are members of the 36 state leagues of municipalities, organized to further the interests of cities, towns and villages. This is an increase of 13 leagues and nearly 3,000 member cities in the past five years. Nine of the leagues, as shown in the report, have close relationship with state universities: Arkansas, Colorado, Kansas, Michigan, Minnesota, Oklahoma, Oregon, South Dakota and Washington. In seven of these cases the league secretary is on the university staff.

Most of the leagues also have some connection with other governmental organizations in their State, the secretaries serving as the "link." The Secretary of the Arkansas League, for example, directs the Bureau of Public Affairs for the State University's extension service. He is also a member of the State Planning Board, and is an Associate Professor of Political Science at the University. The Michigan League Secretary directs the Bureau of Government at the University of Michigan. He is Secretary of the Michigan City Man-

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agers' Association and the State Planning Conference, a member of the Michigan State Planning Board, on the advisory board of the State Accident Fund, serves on a state education commission, on a commission on highway finance and state taxes, and is a research consultant on the Committee on Urbanism of the National Resources Board.

Training schools have from the beginning of the existence of the leagues been an important activity. Over a five-year period a total of 44,435 officials—fire, police, finance, flood inspection, welfare—have attended the schools, which are usually held for a period of one or two weeks. Fifteen of the leagues provided one or more such schools in 1935.

The American Municipal Association, organized in 1924, is the national federation of these state leagues, acting as a clearing house of information for them and carrying on a wide variety of activities. One of its duties is to keep members informed of Federal legislation affecting municipal government, and to represent the interests of leagues nationally, in much the same way that the state leagues represent towns and cities before the state governments. Contact with municipal government and with the development of best practices in foreign countries is also maintained through the Association, which is a member of the International Union of Local Authorities, with headquarters at Brussels.

ACTIVITIES OF THE U. S. CONFERENCE OF MAYORS

The chief Federal legislative activities of the United States Conference of Mayors included the formal proposal to Congress in January of a continuation of the WPA program for the fiscal year 1936-1937. A formal report was also submitted to the Congress of the United States through the Vice President and the Speaker of the House of Representatives. In March, the Conference of Mayors prepared its report of the Federal work program, which was presented to the President by Mayor LaGuardia of New York. The re-

port answered four questions as follows: Do the unemployed want work? Is work the proper method of providing relief? Are the WPA projects in operation sound and useful? Are there additional work projects of value which could be prosecuted under a continuing WPA program? The Conference of Mayors was successful in defeating an amendment to the 300,000,000 PWA appropriation proposing a reduction in the amount of grant from 45 per cent to 35 per cent. Thus was maintained the same principle as was adopted by the Federal Government in 1935. When it appeared that, by administrative authority, the PWA might reduce the grant in the summer, the Conference of Mayors successfully petitioned the President to maintain the 45 per cent basis, and that is the principle now being followed by the PWA. The Federal Aid Highway Appropriation, authorized at the last session of Congress, also carried the same provision with regard to authorizing expenditures within municipal corporate limits that had been previously voted by Congress.

During the year the Conference prepared a large number of research and informational reports in accordance with its general activities. These dealt with such subjects as parking meters, the legality of parking meters, tax abatements and exemptions offered by cities to attract new industries, drunken driving, anti-noise ordinances, fireworks casualties and regulations, municipal regulation of mechanical amusement devices, cities and the 1936 Congress, and a number of other reports. Two important volumes were published, including *Recent City-Federal Relations* which is the first important contribution in this field.

Eight national departments were established during the year. A new policy has been followed by the Conference for the first time, and four regional meetings were held in the four general geographical areas of the country. These regional meetings are supplemental to the Annual Conference, which is held in Washington.

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NATIONAL MUNICIPAL LEAGUE MEETING

The forty-second annual meeting of the National Municipal League was held in Toledo, Nov. 16-17, 1936 in conjunction with the Proportional Representation League and the National Association of Civic Secretaries. Reconstruction of municipal finance and personnel problems were the chief topics discussed.

POLICE TRAINING

University Courses.—There have been no really important developments in the field of police administration during the past year, with the exception of a five-year police training program at the University of Michigan, in cooperation with the state police. The University of Washington has established two well-rounded courses for police work; one specifically designed to train policemen for practical duties in the police field, and the other to train men to become scientific investigators. At Harvard, the Erskine Foundation has concentrated its attention on the preparation of a program covering the traffic field, which should be a treatise helpful to all police officers throughout the country. In the preparation of this work, scientists and practical policemen have joined forces in an attempt to make the manual useful to all police organizations and persons interested in traffic problems.

Federal Bureau of Investigation.

—Courses for police officers given by the Federal Bureau of Investigation have proved helpful and if we may judge by the statements of the director of the Bureau, are to be continued indefinitely. These courses offer an opportunity for men in police service to attend the school at Washington and better fit themselves for training other members in their department. A number of training schools have been offered in different parts of the country—the traffic officer training school at Northwestern University, the police officers training school at Wichita, Kan. designed to aid police officers of the entire State, and courses offered at Ohio and

Indiana State universities. Perhaps the highest development in police training is the course at the school at Wichita, in cooperation with the police department. Arrangements have been made with city officials for the appointment of members of the police class to serve as cadets in police service. This innovation will undoubtedly have many followers because it offers an opportunity for young men to acquire knowledge and practical experience concerning police methods, and, at the same time, obtain a scientific and cultural background.

California has moved forward to the installation of a training program in which the Department of Education of the State is cooperating with the Bureau of Identification to put on a program of training in various matters designed particularly to reach the officers of the smaller units. The State has been divided into a number of districts each having a designated center. At these centers from time to time lecturers provided by the State Bureau of Identification meet with the local officers and carry on a conference along plans laid down by the Department of Education. The program is somewhat a cross between a true conference program and an ordinary university extension program.

Use of Films.—Through the medium of movies, the St. Louis Police Department teaches its recruits how to shoot accurately. The film, made especially for this purpose, depicts a fugitive escaping from a lumber yard. It is operated by a projector which is adjusted to stop at the sound of a gun discharge, so that when the practicing policemen shoots, he can actually see his mark. The scene is projected on a screen which can easily be adjusted after being pierced by a bullet. The Public Safety Institute of Purdue University, utilizes films for teaching the accident prevention and investigation technique originated by the Institute and now used by various police departments. Kansas City's Police Department is making two sets of films, one of which will be used in the training schools

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to present right and wrong police tactics in such situations as searching a suspicious car, answering a hold-up complaint from a grocery store, and curbing a fugitive traffic violator from a motor cycle. The second set of films will be used to train the public. They will record the daily activities of police in the radio room, the detective bureau, the lost and stolen property room and other divisions.

POLICE RADIO

More than 200 municipalities are now operating ultra-high-frequency police-radio stations, on 30,100, 33,100, 37,100 and 40,100 kilocycles. All stations operating at these frequencies are classed by the Communications Commission as experimental stations, since adjustments may have to be made later to suit the degree of crowding and interference that may occur on this band. This frequency corresponds to about 9.5 meters, as compared with 120 meters for conventional police-radio operation and 200 meters for the regular broadcast band. Of the 218 or so ultra-high stations, 84 are two-way.

The following is from a letter received from the Federal Communications Commission dated March 16, 1936: "Municipalities interested in either replacing existing equipment or installing new stations should purchase only equipment constructed in accordance with the most modern engineering standards. Consideration should be given to selectivity of receivers, frequency stability of both the receivers and transmitters, and ruggedness of apparatus, rather than costs. Many municipalities have found that the high obsolescence introduced by the purchase of cheaper equipment more than balances the difference in the initial cost."

ENLISTMENT OF SCIENCE IN FIRE PROTECTION

The reduction in fire waste in our cities during the past few years may be attributed, at least partially, to the advancement made in the application of science to the fire-fighting service. Just as science is aiding the

Department of Justice in apprehending and convicting criminals, so is science aiding fire departments in the prevention and extinguishment of fires, in the detection of the fire-bug, and in the saving of lives through modern first-aid treatment. Much progress has been made in those fire departments having active, progressive and enterprising chiefs in developing new methods and services. Fire departments that are well trained and equipped are becoming greater assets in communities as they gradually take over emergency services such as first-aid, rescue, and life-saving in addition to fire service. Volunteer as well as paid departments are distinguishing themselves in this kind of community service.

Science, however, was of little avail to 40,000 terror-stricken inhabitants of Western Oregon early in October where forest fires raging in the parched timberland were whipped down to the coast by high winds. Fire completely destroyed Bandon (population, 1,500), burned parts of DePoe Bay and small communities and 400,000 acres of timber, including some of the famed redwoods of Northern California. In Bandon, where practically all buildings were razed, a dozen bodies were recovered. One man was killed clearing wreckage, some 30 others were missing. Of the 5,000 firefighters in the woods, four were killed by falling trees.

Work has been done during the past year on explosive vapor-air mixtures and dust-air mixtures by the Underwriters Laboratories of the National Board of Underwriters. This includes the research work which has been done by the Underwriters Laboratories, maintained by the National Board of Fire Underwriters, The United States Bureau of Standards, and others on the rating of hazardous locations. They have also studied the severity of explosions of various vapor-air and dust-air mixtures; and the development by manufacturers of electrical and other devices of the explosion resisting type for use under these conditions and the testing of such equipment. While these are not developments which

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started within the past year, nevertheless, much progress was made in these fields during 1936.

PROGRESS IN FIRE PREVENTION

Dwelling Inspection.—Remarkable results in reduced fire losses in dwellings where the local fire department periodically inspects dwellings were revealed in a survey made by the National Fire Protection Association. Many cities, seeing the results accomplished in other localities, began annual or semi-annual dwelling inspection campaigns. In addition to reducing loss of life and property, such work by firemen is building good will for the fire department and the city administration at no extra cost to the taxpayer.

Firemen's Training.—Considerable progress was made in firemen's training work throughout the United States and Canada. Schools were held at approximately 400 centers with a total attendance of over 30,000 firemen. Twelve years ago only two schools were held. The various agencies promoting firemen's training work have recently become aware of the need for developing uniformity of training procedures and subject matter. Although much has been published for use at fire schools, further coordination of effort and standardization of instructional material is necessary.

Closed Fire Truck.—The closed body type of fire truck, which has been used in foreign countries for some time, but is just now becoming popular in the United States, was adopted in a number of cities. Firemen necessarily subject themselves to the elements and to danger of personal injury at fires, but there is no justification for making trips to and from fires unduly hazardous. The value of these trucks in protecting firemen against accident and illness is being demonstrated in the several cities which have purchased one or more of them for trial. One of the closed type pieces recently purchased by the Detroit Fire Department figured in a collision with an open truck, and in spite of the fact that

the closed truck was struck by the open truck, there was one fatality and two injuries to men riding on the running board and rear step of the open truck, and not even an injury to men riding in the closed truck.

Publications.—A noteworthy contribution to the field of fire protection and fire prevention was the publication of the eighth edition of the *Crosby-Fiske-Forster Handbook of Fire Protection*. This "bible" of the fire engineering profession was first published in 1896. Beginning with 1936, every fire chief in the United States and Canada is now receiving the publication, *Volunteer Firemen*. The membership of the Volunteer Firemen's Section of the National Fire Protection Association increased over 2,000 last year, and the edition of the magazine now runs more than 25,000 copies per month.

Radio.—The use of the radio as a medium for calling public attention to fire hazards became more popular than ever. The radio is well adapted to instruction of the people in fire causes and their prevention. Reviewing current fires each day or each week is being successfully employed in a number of cities. In this way the dramatic aspects of even the ordinary fire are capitalized to advantage.

Cooperative Fire Fighting.—The idea of mutual aid systems or cooperative fire fighting, whereby neighboring fire departments assist each other at big fires, received added impetus during the year. Hundreds of communities throughout the country now have this extra fire protection with little or no additional cost. Small towns that do not have their own fire fighting facilities are awakening more and more to the necessity of making some provision for fighting fire. Local departments are organized or contracts are entered into with nearby city departments to furnish this service. Contracts usually specify a certain charge, such as \$50 per run, a flat rate per hour, or a certain rate per piece of apparatus.

Fireworks Control.—A survey made by the National Fire Protection Association shows that substan-

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tial progress has been made in the enactment of fireworks legislation since a similar survey made by the Association in 1925. Today, 23 States have laws controlling fireworks, as compared to about 12 States in 1925. Fireworks ordinances are now in force in 553 cities and towns in 35 States. About 400 of these prohibit the sale or use of fireworks except for special public displays.

FIRE LOSSES

One measure of the results of fire prevention and protection work is the continued downward trend of the national fire loss. The loss in 1935 as estimated by the National Board of Fire Underwriters was \$248,763,856 which is the lowest figure since 1915. Of all cities of 20,000 population or over, 11 had a per capita loss of over \$5 in 1935 as compared to an average of 24 cities in this classification for the past five years. The Canadian fire loss, as reported by the Dominion Fire Commissioner was \$23,221,521 in 1935, which is the lowest figure of any for the past 11 years.

As for arson losses, the National Board reports that during the past year the number of fires of incendiary origin has continued to decrease. The year 1936 was the fourth consecutive year in which fires of this character have diminished. More practical laws, greater interest and efficiency of officials charged with the investigating and prosecution of arson and a wider public interest in crimes of this character have contributed to the decline.

FIRE HAZARD AND BUILDING CODES

During the past year there has been a decided revival of interest in building codes due chiefly, of course, to the increased building activities of the past twelve months. With the incentive toward advancing out of the "unprotected" and into the "protected" class of city many towns have put in new water supply systems where formerly they had none. In this connection if the desired end is to be attained, it is necessary to set

up a fire department and in most cases this has been done.

During the depression years, fewer than usual complete surveys were made by engineers of the National Board of Fire Underwriters but there were many supplementary inspections. Now, however, they are getting back to making complete surveys again due to requests from different parts of the country. Many mayors, calling upon the National Board for this service, do so in the thought that certain improvements (many financed by the W.P.A.) will entitle them to a better classification, and that often proves to be true.

Unusual interest is being shown in the preparation of ordinances to regulate special hazards as, for instance, the storage and handling of inflammable liquids and gases.

Two years ago the National Board of Fire Underwriters, in cooperation with the National Association of Public School Business Officials, inaugurated a plan for the periodic inspection of all school properties by public school authorities in conjunction with members of the municipal fire department. During 1935, using the comprehensive inspection blank prepared by the National Board and adopted by the public school business officials, 600 communities conscientiously carried out the plan. At the same time the schools used a booklet prepared by the National Board, entitled *Fire Prevention and Protection as Applied to the Public and Parochial Schools*, covering the best practices in building construction and fire protection for school properties.

During 1935, the inspection blank and the pamphlet, which was found to have great value in checking hazardous conditions as the inspections were made, were used in 900 communities, and the total distribution of material since September, 1934 now approximates 330,000 copies of the self-inspection blank and 48,000 copies of the booklet. It appears now that this plan has been firmly established in the school systems of America, and the cooperation of the National Board will, of course, continue.

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ROAD IMPROVEMENTS NEAR CITIES

Improvement of roadsides by landscape grading, seeding, sodding, and planting has become increasingly popular in recent years. Since 1933 it has been required that each State include roadside improvement projects in its program of work to be done with Federal funds administered by the Bureau of Public Roads. The total program—completed, under improvement and planned—included 1,391 sections of road improved according to plans prepared by landscape specialists. Roadsides have been, or are being, improved on approximately 5,000 miles of highway at a cost of more than \$7,000,000, of which the Federal government is contributing more than \$6,000,000. Most of these improvements are on main arteries of travel at the approaches to the more important centers of population, and much of the work has been done along existing surfaced highways.

Several features of roadside improvement work that have come to the attention of highway engineers as a result of the object-lesson demonstrations, have been adopted in regular highway construction practice in several of the States. Among the practices adopted are flatter grad-

ing of slopes and slope rounding, reduction in the depth of ditches, elimination of "borrow" pits, a better "cleanup" of the roadsides after construction is completed, the saving of trees and other volunteer growth, the conservation of topsoil humus where feasible for later use in ground cover protection, the planting of natural snow barriers, and the construction of small parking areas at scenic outlooks. Several States, in building new roads, are doing as much of this work as right-of-way widths permit.

State highway department organizations are providing for an improved technical approach to the various roadside problems, and as experience is accumulated, they are developing more effective methods of handling the work. Only a few years ago highways were completed with little thought to the appearance of the finished roadside and attempts were made at so-called "beautification" under conditions already bad and often with overemphasis on some particular kind of planting. Results have been much better since roadside improvement has been regarded as an integral part of highway improvement to be provided for in planning rather than as an afterthought following construction.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN CIVIC ASSN., 901 Union Trust Bldg., Washington, D. C.

AMERICAN LEGISLATORS ASSN., Drexel Avenue and 58th St., Chicago, Ill.

AMERICAN MUNICIPAL ASSN., 850 East 58th St., Chicago, Ill.

AMERICAN SOCIETY OF MUNICIPAL ENGINEERS, 850 East 58th St., Chicago, Ill.

GOVERNMENTAL RESEARCH ASSN., 850 East 58th St., Chicago, Ill.

INTERNATIONAL CITY MANAGERS' ASSN., 850 East 58th St., Chicago, Ill.

MUNICIPAL FINANCE OFFICERS ASSN., Chicago, Ill.

NATIONAL ASSN. OF CIVIC SECRETARIES, Wm. Penn Hotel, Pittsburgh, Pa.

NATIONAL CIVIC FEDERATION, 570 Lexington Avenue, New York City.

NATIONAL CIVIL SERVICE REFORM LEAGUE, 521 Fifth Ave., New York City.

NATIONAL INSTITUTE OF PUBLIC ADMINISTRATION, 302 E. 35th St., New York City.

NATIONAL MUNICIPAL LEAGUE, 309 E. 34th St., New York City.

UNITED STATES CONFERENCE OF MAYORS, 850 East 58th St., Chicago, Ill.

DIVISION VI

TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

ALASKA AND HAWAII

BY ERNEST GRUENING

DIRECTOR, DIVISION OF TERRITORIES AND ISLAND POSSESSIONS,
DEPARTMENT OF THE INTERIOR

ALASKA

Foreign Trade.—During the fiscal year ended June 30, 1936 commerce between the United States and Alaska decreased approximately \$4,147,147. A decrease of \$9,684 in value of fish exports from Alaska was due mainly to a sharp decline in the red salmon pack because of very restricted operations in the Bristol Bay district and curtailment of fall fishing in some parts of southeastern Alaska, together with a prolonged fishermen's strike in the Copper River region. At the same time there was a notable increase of \$1,491,754 in the value of other fish products. A slight decrease of \$57,868 was shown in shipments of furs from Alaska due mainly to the generally low prevailing prices for these products. The decrease in fish and fur exports was partially offset by increased mineral products and export, the most notable of which was the reopening of large copper mines which had been idle for three years, resulting in an increase of \$3,306,652 in copper ore production, with an attendant increase of \$235,382 in silver. An increase of \$1,837,874 in gold values is due to greater production as the price of this product is fixed. Other products, particularly platinum metals and tin, contributed to a further increase of \$214,727. The balance of trade in favor of Alaska was

\$20,090,132, which is \$9,781,890 less than the previous year.

Finance.—Cash on hand in the territorial treasury Dec. 31, 1935 amounted to \$637,998.36 as compared with \$516,398.26 the year before. The combined resources of territorial and national banks at the close of business June 30, 1936, were approximately as follows: capital, \$840,000; surplus and undivided profits, \$926,551; deposits, \$13,787,000. For the previous year they were as follows: capital, \$890,000; surplus and undivided profits, \$834,600; deposits, \$11,633,000.

Fisheries.—The total value of the Alaska fishery products in 1935 was \$21,230,646, a decrease of \$10,732,647 from the preceding year. Salmon products comprise about 72% in quantity and 88% in value of the total Alaska fishery output in 1935. The total number of salmon of all kinds taken in 1935 was 73,263,804. The number of cases packed was 5,133,122, valued at \$25,768,136 as compared with 7,481,830 cases valued at \$37,611,950 in 1934. Ninety-nine canneries were in operation, as compared with 110 in the previous year, and the number of persons employed decreased from 21,654 to 17,529. An expansion in the herring business, due to the opening of reduction plants for the first time in the Kodiak area, was an outstanding feature of activi-

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ties in 1935. Thirty-two plants operated, six more than in the previous year. The total value of herring products was \$2,374,092 as compared with \$1,603,024 in 1934. The persons employed in this industry increased from 885 to 1,339. The whaling industry took 394 whales the total value of the products being \$390,384 as compared with \$251,005 in 1934 when 465 whales were taken.

Furs.—A total of 57,296 fur seal skins was taken in the Pribilof Islands operations in 1935, an increase of 3,828 over the previous year. Of this total 45,824 were from St. Paul Island and 11,472 from St. George Island. Killings were confined practically entirely to three-year old male seals. Computation of the number of animals in the Pribilof Islands fur-seal herds as of Aug. 10, 1935, indicated that there were 1,550,913 seals of all ages and classes in the herd, an increase of 120,495 over 1934. These herds have steadily increased since 1910 when there were but 132,000 seals. In the fiscal year 1936 two public auction sales of seal skins from the Pribilof Islands were held by the Fouke Fur Co. at St. Louis, Mo., and 2,129 Pribilof Islands seal skins were disposed of at special sales. At the sale on Sept. 16, 1935, 24,429 fur seal skins brought a total gross price of \$569,708.10. At the sale on April 27, 1936, 22,373 fur seal skins brought a gross price of \$600,770.25. The skins sold at special sale brought \$53,377.92. There were also sold at public auction 983 blue and 19 white fox skins taken on the Pribilof Islands. At the September sale 491 blue fox skins were sold for \$10,136.50, an average of \$20.64 each, and 19 white fox skins were sold for \$16 each, a total of \$304. At the April, 1936 sale 492 blue fox skins brought \$14,816 an average of \$30.11 each. In the 1935-1936 season 220 blue and nine white fox skins were taken on St. Paul Island and 799 blue and six white skins on St. George Island.

Minerals.—The total value of mineral products in Alaska since 1880, when records were first kept, is now more than \$698,628,000. The peak year was 1916 when the value was

\$50,900,000. Mines in Alaska produced \$18,312,000 worth of minerals in 1935 compared with \$16,721,000 in 1934. Of the mineral wealth produced in Alaska since records were first kept, gold is responsible for more than \$450,681,000, copper for \$215,941,000, silver \$12,424,000, the balance being distributed between coal, tin, lead and others, including platinum metals. The output of gold in 1935, however, declined to 455,429 fine ounces, as compared with 457,343 fine ounces in 1934. The revival of copper mining at the larger Alaska properties in 1935 was among the noteworthy incidents of the year in the mineral industry. These mines near Kennicott in the Copper River region, together with smaller mines from whose concentrates copper is recovered as a byproduct, yielded 15,056,000 pounds of copper, valued at \$1,249,700 as compared with 121,000 valued at \$9,700 the previous year. The production of all platinum metals produced in 1935 was 8,685 fine ounces, worth \$259,700 as compared with 2,555 fine ounces valued at \$85,600 in 1934. In the past, tin worth more than \$1,000,000 has been produced from Alaska deposits, but for several years the annual output has been small. In 1935, however, revival of mining in the Seward Peninsula area, as well as small productions from the Hot Springs district of the Yukon region afforded an output equivalent to 98,800 pounds of metallic tin worth \$49,800. The Alaska coal mines in 1935 produced 119,425 tons valued at \$501,600, as compared with 107,500 tons valued at \$451,500 in 1934. In addition 42,261 tons of coal were imported, thus indicating a domestic consumption for the year of about 161,700 tons. The principal producing Alaska coal mines in 1935 were those of the Evan Jones Coal Co., in the Matanuska district, and the Healy River Coal Corporation, in the Nenana coal field, north of the Alaska Range. Petroleum production was a negligible operation, considerable quantities being imported into Alaska from the United States.

Railroads.—The total deficit for rail and river boat operations was

\$20,408.17. The net deficit, including operating expenses of rail and water lines, less revenues of operation and non-operating income, was \$17,443.89, a decrease of 76.3230% from the previous year. The number of rail-line passengers carried amounted to 43,081, an increase of 19,771 over the previous year. Rail-line freight amounted to 151,010 tons, an increase of 41,796 tons over the previous year. Of the total freight, 92,205 tons consisted of coal.

Aviation.—Commercial aviation in Alaska continued to forge ahead. Thirteen years ago there was one experimental air mail contract to carry mail 300 miles from Fairbanks to McGrath. There are now 79 planes in service as compared with 73 during the preceding year, and plane miles flown total 2,130,929, as compared with 1,685,654 the previous year. The number of passengers carried increased from 13,318 to 16,982. Mail and freight carried totaled 2,418,616 pounds as compared with 1,722,757 pounds the year before.

Education.—Public schools in Alaska for the education of white and mixed-blood children consist of schools within the incorporated cities and school districts and rural schools outside. Schools are supported largely by appropriations from the territorial treasury augmented by 25% of the Alaska Fund which is derived from a variety of Federal taxes collected in the Territory. This fund nets the schools about \$50,000 a year. Schools within the incorporated cities and school districts derive from 20% to 30% of their operating costs from local taxation, the Territory providing the balance, while all funds for the support of rural schools are furnished by the Territory. The educational question is complicated by the distribution of children in widely-separated communities and the inadequacy or total lack of transportation and communication facilities in some regions. The seasonal nature of many occupations and the nomadic life of some of the natives add to these complications. Four-year high schools, accredited by the University of Washington, are maintained in 10

cities, as follows: Anchorage, Cordova, Douglas, Fairbanks, Juneau, Ketchikan, Petersburg, Seward, Sitka and Wrangell. The high schools at Anchorage, Cordova, Douglas, Fairbanks, Juneau, Ketchikan, Nome, Petersburg, Seward, Sitka, Skagway and Wrangell are also accredited by the Northwest Association of Secondary and Higher Schools. Non-accredited high schools are maintained at Haines, Nenana, and Valdez. Graduation from a three-year standard normal school or its equivalent is a prerequisite for the Alaska elementary certificate. High school teachers must be graduates of standard four-year colleges and must have completed a minimum of 15 semester-hours in education. During the past year the annual turnover of teachers has decreased from 40% to 18% of the total number employed. At the fourteenth annual commencement of the University of Alaska, 18 students were awarded diplomas. The enrollment of 193 regular students for the academic year compares with 164 the previous year. The Freshman class of 88 was the largest in the history of the institution. In addition to the regularly enrolled there were the following: 47 in Home Economics Short Course; 20 in Mining Short Course; 469 in Mining Extension, making a grand total for regular and part time students of 729.

Health.—Tuberculosis is the primary cause of death among the Alaskan natives, causing more than one-third of all deaths over the last few years period than any other disease. Hospital facilities for the care of this disease are insufficient and an attempt is now being made to secure funds for the construction of several tuberculosis hospitals. The National Tuberculosis Association and other welfare organizations are becoming more interested in the situation and the combined efforts of all concerned should result in materially decreasing the incidence of this disease. The Federal Government's Social Security Act became operative in Alaska March 1, 1936, with cooperative participation in the Public Health, Maternal and Child Health, and Crip-

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pled Children programs, as outlined by the provisions of the act. The following workers have been added to the staff of the Commissioner of Health; an epidemiologist, with two assistants; a sanitary officer; laboratory technician; maternal and child health director, with one advisory and three field nurses; and two additional nurses now taking a course in Public Health Nursing who will ultimately be employed in the department.

Reindeer.—Estimates place the total number of animals above 594,000. They exist under conditions almost identical with cattle conditions in the West before the days of fencing. The policy of not transferring government-owned reindeer meat to the States to enter into competition with private enterprise has been continued. The Government markets carcasses only in Alaska. Governor John W. Troy has recommended that the ownership of reindeer by whites be abolished, if that is possible legally, with due consideration for private interests. He believes the principal end to be served through reindeer breeding and use should be the welfare and benefit of Alaska natives. He recommends that prospectors, trappers, and other residents of reindeer country should be permitted to procure them under fair regulations, but points out that a profitable industry of considerable proportions in breeding and marketing reindeer is impossible. He recommends that surplus reindeer be sold to the highest bidder and paid for at the time in cash, this fund to be used for the benefit of the Indians and Eskimos. There is considerable surplus of these animals, ranging from Point Barrow to Kodiak Island and along the Alaska Peninsula. This large number was grown from 1,280 reindeer first introduced into Alaska in 1891.

HAWAII

Foreign Trade.—Hawaii continued to maintain its favorable balance of trade. For the calendar year 1935 imports were valued at \$84,553,972 and exports \$100,033,996, while for 1934 the value of imports

amounted to \$69,234,606 and exports \$95,830,059. As always, the great bulk of exports went to the United States mainland, foreign countries being represented by the comparatively insignificant figure of \$1,338,027. Canned pineapple and green coffee were the principal items exported to foreign countries. Sugar, raw and refined, was the main item of export, valued at \$58,679,773 as compared with \$53,799,860 in the calendar year 1934. The amount of sugar exported during 1935 showed a decrease from the previous year, due to restrictions imposed by the terms of the Agricultural Adjustment Administration Act.

Sugar.—Benefit payments by the Federal Government under the Agricultural Adjustment Act to the sugarcane producers in the Territory of Hawaii amounted to a total of \$13,323,861.57 for the fiscal year ended June 30, 1936. These payments were made pursuant to the terms of the Hawaiian Plantation-Producers Sugarcane Production Adjustment Contract, which was approved by the Secretary of Agriculture and signed by all the Hawaiian plantation-producers April 24, 1936. Amounting to approximately \$9 per ton of raw sugar marketed in Continental United States during the life of the contract, these payments represented a material increase in the revenue of the principal industry in the Territory. Under the terms of the Adjustment Contract, the total area of land planted to sugarcane was reduced from 257,986 acres to 233,660 acres. The reduction in production of sugar brought about by the terms of the Adjustment Contract is estimated at 522,625 tons, with a farm value of \$20,266,000. Payments to approximately 3,000 adherent planters, who under the Adjustment Contract were not obliged to reduce their cane acreage, aggregated \$702,799.

In addition to the benefit payments made to producers for adjustment in production of sugarcane, \$505,000 was made available under Section 15 (f) of the Agricultural Adjustment Act to be expended for the general benefit of agriculture and the development of diversified agricultural activities in

ALASKA AND HAWAII

the Territory. In all, nine projects recommended by the Hawaiian Advisory Committee were approved by the Secretary of Agriculture and by the President. These projects, which are now in operation, are under the direction of the United States Department of Agriculture cooperating with the University of Hawaii and other interested agencies.

While all agricultural production adjustment contracts were invalidated by the Supreme Court decision of Jan. 6, 1936, the sugar quota provisions of the Jones-Costigan Act were continued in effect. The Hawaiian quota for the calendar year 1935 was originally fixed by the Secretary of Agriculture at 894,992 short tons, raw value, and later raised to 925,969 tons. The original quota for the calendar year 1936 was set at 941,199 tons and has since been increased to 1,059,294 short tons.

Pineapples.—Due to large over-production a few years ago, coupled with falling purchasing power on the mainland, the necessity of adapting production to consumption led to the organization of the Pineapple Producers Cooperative Association in 1932. This limitation was effected, although it involved the sacrifice of large sums already invested. Members of this Association put a new marketing agreement into effect in August, 1933, transferring all then existing stocks to the ownership of the Association. Each member then drew on the Cooperative for goods sold to consumers. Sales were pooled and the realizations prorated to members on the basis of the contribution of each to the pool. The Association of Hawaiian Pineapple Cannerys was dissolved and all of its assets turned over to the new Cooperative, including the experiment station, maintained on an annual budget of about \$200,000. This station has to its credit notable achievements, the greatest to date being the discovery of the cause of wilt which took a heavy toll of the plants, and the development of successful methods of control. The over-production of canned pineapples having been dis-

posed of through limitation of the crop, the pack in 1933 was increased to 7,815,540 cases, an increase of more than 50% over the pack the year before. Despite this increase, the unsold carry-over at the end of the pack year, May 31, 1934, was well under 1,000,000 cases.

Each subsequent year the Directors of the Association have set the amount to be packed with a view to supplying all that the consumers would use. The pack has increased to an annual production of at least 10,000,000 cases with prices maintained at a uniform level since early in 1934. This price level is about 20% lower than the average for the post war period up to 1930. The rapid increase in popular demand for pineapple juice has led to its production in substantial volume so that several million cases per year are now being marketed in addition to the canned fruit. This development of juice and increased efficiency of production are enabling the producing companies to operate satisfactorily notwithstanding lower prices received and the increased wages being paid to employees.

Revenues.—Customs receipts for the fiscal year ended June 30, 1936, from all sources totaled \$1,856,480, an increase of \$172,000 over the previous year. Internal revenue receipts for the fiscal year 1936 amounted to \$7,980,700, a very considerable increase over 1935 when the figure was \$5,652,504. In fact 1936 receipts were the highest since 1922, and exceeded each of 16 of the States.

Population.—The population of Hawaii on June 30, 1934, was placed at 393,277, an increase of 8,840 over the year before. These figures are based on estimates by the Board of Health. Based on the Federal census for 1930, this Board estimated the principal racial groups as follows: Japanese, 149,886; Filipino, 53,550; Portuguese, 29,863; Caucasian, 58,330, including 1,261 Spanish; pure Hawaiian, 21,594; Caucasian-Hawaiian, 19,391; Asiatic-Hawaiian, 18,217; Puerto Rican, 7,470; Chinese, 27,495; Korean, 6,682; all others, 799.

VI. TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

PUERTO RICO

By BLANTON WINSHIP

MAJOR GENERAL, U. S. A., RETIRED; GOVERNOR OF PUERTO RICO

DESCRIPTION AND AREA

The island of Puerto Rico is the fourth in size, is the easternmost of the four larger Antilles, and San Juan, its capital, is approximately 1,400 nautical miles from New York City and 963 nautical miles from Key West. The Island is 100 miles long by 35 miles wide and has an area of 3,306 square miles. It has an approximate population of 1,750,000. The climate is exceptionally agreeable, due to the advantageous geographical location and the continual refreshing trade winds. The average winter temperature is 73 degrees Fahrenheit and the summer average is 76 degrees. In the mountains, which rise to a height of 4,400 feet, the average temperature is 70 degrees. By contrast Washington, in summer, ranges from 85 to 90 degrees, and higher temperatures (unknown in Puerto Rico), are not uncommon. Puerto Rico is considered the coolest region in the Caribbean tropics. The prevailing language is Spanish, although both English and Spanish are used.

GOVERNMENT

Political Status.—Puerto Rico has been held by the Supreme Court to be unincorporated territory of the United States, a status differing from that of those territories which have been incorporated into the Union.

Organization.—Puerto Rico is governed under the Act of Congress of March 2, 1917, known as the Organic Act, and subsequent amendments. Supreme Executive power is vested in the Governor, who is appointed by the President by and with the advice and consent of the Senate of the United States, and holds office at the pleasure of the President and until his successor is chosen and qualified. The act provides for seven departments—Justice, Finance, Interior, Education, Agriculture and Commerce, Labor, and Health. The

Attorney General, who heads the Department of Justice, and the Commissioner of Education are similarly appointed by the President; the others are appointed by the Governor. The heads of the departments collectively form a council to the Governor known as the Executive Council. The Auditor of Puerto Rico is also appointed by the President.

Resident Commissioner.—The Island is represented in the United States by an elected Resident Commissioner, who has a seat in the United States House of Representatives, with the right to debate but not to vote.

Legislature.—Local legislative powers are vested in a Senate and a House of Representatives chosen by the electorate of the Island every four years.

Judiciary.—The judicial system consists of the Supreme Court, the District Court of the United States for Puerto Rico, the district and municipal courts, and justices of the peace. Appeals may be made in certain cases to appropriate higher courts, including the Supreme Court of the United States. The Chief Justice and four Associate Justices of the Supreme Court, the District Judge, District Attorney and Marshal of the District Court for Puerto Rico are appointed by the President. Statutory laws of the United States not locally inapplicable, except as otherwise provided, are in effect in Puerto Rico, except the internal revenue laws.

ELECTIONS

The regular quadrennial general election held Nov. 3, 1936, resulted in the continuance in power of the Union Republican-Socialist Coalition. Pending final official count, the figures show that votes were cast for Resident Commissioner by the two major political organizations as follows: Liberal Party, 245,942; Coalition,

PUERTO RICO

191,216. Precautions were taken to insure against disorder during the voting period, and the elections were the most peaceful and orderly in the history of the Island.

LEGISLATION

The Legislature was in session three times during 1936. The fourth and last regular session of the Thirteenth Legislature convened Feb. 10. As a number of important matters were left pending when the Legislature adjourned April 15, a third special session was called to meet on June 8, which lasted until June 21.

The more important measures enacted during these two sessions were several acts amending the election law to facilitate the work connected with the November election and to discourage fraudulent practices; two new temporary alcoholic beverage laws; amendments to the inheritance, income and excise tax laws so as to produce increased revenue; acts to develop the coffee and tobacco industries, for the eradication of cattle tick and bovine tuberculosis, to enable the Puerto Rican Government to cooperate with the United States Government in measures extended to Puerto Rico under the new Soil Conservation and Domestic Allotment Act, making provision for deferred payment of property tax in 20-year installments, regulating the possession of firearms, providing for a graving dock in San Juan harbor, and providing for a \$6,000,000 bond issue for the completion of insular and municipal road plans.

A fourth special session was called to meet Sept. 21 for the sole purpose of enacting legislation for the acceptance of a loan from the Public Works Administration for the purchase and improvement of the Ponce electric plant.

ECONOMIC CONDITIONS

General economic conditions showed marked improvement at the end of the fiscal year. The agricultural rehabilitation projects undertaken by the Puerto Rico Reconstruction Administration have provided employment to a large number of agricul-

tural and industrial workers. The cooperation given to many small farmers is contributing toward a very favorable change in agricultural affairs. The various adjustment laws intended to regulate supply and demand have improved the balance between the native agricultural production and its markets, thus tending to relieve the problem of overproduction and consequent low prices in the local and outside markets. Government and private building construction in cities and towns is general. Taxes are more readily paid, revenues are more plentiful, and the government finds itself in a sounder economic and financial condition. The Insular Government has kept within its budget and added to its surplus. The outstanding technical work that is being done in Puerto Rico in public health, education and agriculture has won attention throughout Latin America. Representatives of a number of countries have visited the Island for observation and many men and women of Puerto Rico are being employed as advisers or instructors in inaugurating or improving services in other countries.

COMMERCE

Considered in its entirety the overseas trade of Puerto Rico showed an increase of 19.5 per cent in exports and an increase of 16.3 per cent in imports. The excess of exports over imports, the so-called favorable balance, reached a level practically equal to that of the year 1930, which amounted to \$15,643,376 and was the highest for the decade between 1921 and 1930. The past year's balance was \$15,542,570 as compared with \$10,267,264 for the preceding fiscal year. The value of purchases from the continental United States showed an increase in practically everything. This increase is partly due to increased prices, but the total quantities purchased also increased. Total exports amounted to \$99,133,924 of which \$96,991,639 went to the mainland of the United States and \$2,142,285 to foreign countries. Total imports were \$83,591,354, of which \$77,176,472 came from the States and

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\$6,414,882 from foreign countries. Puerto Rico continues to be one of the best customers of the United States. This is due primarily to free trade privileges. It ranks seventh among all countries buying from the United States. It purchases more than any other area in North or South America, with the exception of Canada. It purchases 7 per cent more than Mexico and 16 per cent more than Cuba. The Island buys more food from the States than any foreign area except the United Kingdom.

FINANCE

The total revenue collections of the Insular Treasury for the fiscal year ended June 30 amounted to \$33,619,524 and were the highest ever recorded for the Island. Expenditures totalled \$12,025,082 from the general fund and \$19,136,485 from trust funds. The cash balance in the general fund was \$1,564,714 as compared with \$788,693 for the preceding year, and the cash balance in the trust funds was \$7,256,725 as compared with \$5,552,810 on June 30, 1935. Outstanding bond obligations of Puerto Rico on July 1, 1936 amounted to \$27,155,000. During the year bonds were issued in the sum of \$3,973,000, and bonds redeemed amounted to \$4,298,000. Municipal bonded indebtedness amounted to \$15,247,600.

Total assessed valuation of all real property was \$294,481,256, an increase of \$4,852,662 over the preceding year. Average rate of property tax was 2.1906 per cent. The number of banks doing business on June 30, 1936, was 14 with 19 branches, having aggregate deposits of \$46,203,615, an increase of 26.85 per cent over the preceding year. The cash balances in the general fund and in the trust funds were \$1,564,714 and \$7,256,725, respectively, as compared with \$788,693 and \$5,552,810 on June 30, 1935.

REHABILITATION ACTIVITIES

The Puerto Rico Reconstruction Administration was established in Sept. 1935, and its several projects for the improvement of general conditions of life are in full operation.

Various of its activities have been alluded to under different headings herein. Over 50,000 Puerto Ricans have been put to work. Several model housing projects are under way. In connection with the reforestation and land redistribution programs, several tracts of land have been purchased. Encampments have been established where men are being trained in practical agriculture, rural sanitation, physical health, and in general to live lives in harmony with modern requirements.

AGRICULTURE

The general status of agriculture experienced considerable improvement during 1936. The tobacco industry fared better than in recent previous years, aided in great measure by improvements in the market situation and payments made to farmers by the Agricultural Adjustment Administration. The coffee crop was larger than that required for local consumption for the first time since the 1928 hurricane. The legislature enacted laws creating the Puerto Rican Coffee Corporation and providing for a three-year campaign to regain export markets. Under a special agreement with the Secretary of Agriculture, a Federal allotment was obtained for the disposal of raw coffee exported to the continental United States for consumption. A loan from the Reconstruction Finance Corporation provided working capital. Additional transportation facilities made it possible to have two shipments each week to the New York market, giving impetus to the fruit industry. With the cooperation of the Federal Emergency Relief Administration, the planting of sea-island cotton was resumed and promises to develop into an important source of employment and income, which will not compete with cotton grown in the States. The campaign for diversification of crops on Puerto Rican farms continues. All of the farm credit agencies authorized by Federal laws are operating in Puerto Rico.

PUERTO RICO

PUBLIC WORKS AND COMMUNICATIONS

The entrance channel to San Juan Harbor has been deepened to a depth of 38 feet and the turning basin enlarged, so that the Bay may be safely visited by the largest ships afloat. A marked increase in the number of tourists visiting the Island has taxed the capacities of the steamship lines serving the Island, and there are indications that the Island may soon have some part of the increased shipping facilities it so sorely needs. The air service of the Pan American Airways, Inc., has progressed and improved notably during the year. New schedules place San Juan within eight hours from Miami, eliminating the overnight stop in eastward travel. A second weekly service to South America has been inaugurated.

The number of automobiles registered for the year ended June 30, 1936, was 18,453, which is 1,425 more than the number registered during the preceding year. The Island has more than 1,300 kilometers of hard surfaced roads and approximately 400 additional kilometers are under construction. Through an allotment from the Puerto Rico Reconstruction Administration, in furtherance of its rural electrification program, extensions were made to the hydroelectric and transmission and distribution systems. The International Telephone and Telegraph Company inaugurated transoceanic telephone service with the continental United States.

HEALTH

The death rate fell from 19.2 per 1,000 population for 1934 to 18.4 for 1935, the lowest ever recorded in the history of the Island. Deaths from malaria were 17.3 per cent less than in the preceding year, bringing this disease from third to sixth among the important causes of death. There was a slight decrease in the tuberculosis rate, although this disease continued to be the principal cause of death. A strenuous anti-tuberculosis campaign is being continued, which it is hoped will force a further ma-

terial reduction within the next few years. The number of hospital beds for tuberculosis patients increased from 550 in 1934 to 1,400 in 1935. Five new centers for the treatment of ambulatory cases were opened, making nine in all. To the educational equipment was added a talking picture which is being given wide exhibition. Puerto Rico is spending large sums for control over disease and for further improvements in sanitation and satisfactory progress is being made.

EDUCATION

School Enrollment and Buildings.—The Department of Education continued to address itself with vigor to the problem of increasing the quantity and improving the quality of effective English taught in the schools. Two experts of unquestioned authority, Dr. William S. Gray and Dr. Michael West, were invited to come to the Island for consultation in improving the program. The Legislature provided for the employment of an additional 100 continental teachers of English. During the school year 1935-36 there were 1,836 schools, divided among 23 high schools, 261 elementary urban, 1,504 elementary rural, 47 second units, and one vocational school. A total of 256,352 pupils was enrolled, an increase of 9,938 over the preceding year and the highest on record. This increase was made possible by the help of the FERA. Average daily attendance was 224,086. Seventy-one per cent of the students are in the first four grades. The total number of school buildings was 2,191, of which 1,108 were owned by the Government. There were 5,308 teachers, of which 4,594 were paid from Insular, 166 from municipal, and 548 from emergency relief funds. There were 593 organized school lunch rooms, 123 urban and 470 rural, serving an average of 33,565 pupils daily. Forty-seven private schools were in operation, having an enrollment of 9,169 and employing 443 teachers.

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University of Puerto Rico.—Enrollment in the University of Puerto Rico for the school year 1936-37 was 4,952 as compared with 4,487 for 1935-36. An allotment from P.R.R.A. funds has enabled the University to expand its physical plant. Several new buildings are under construction.

Aviation and Radio.—The outstanding event of the year was the opening of the School of the Air in January, 1936, made possible by the interest and generosity of the Carnegie Corporation. The results were so convincing that the Legislature voted an appropriation to make radio instruction a permanent part of the school system. The Carnegie grant also made possible the inauguration of work in visual instruction.

LABOR CONDITIONS AND PUBLIC ORDER

Puerto Rico now has a model workmen's compensation law, covering agricultural as well as industrial employees. The law has worked successfully. The Island has been free from serious strikes and labor disturbances and the few minor strikes were settled quickly and satisfactorily.

The police force of Puerto Rico is a splendid, capable body, well-trained in its duties. Several unfortunate occurrences chargeable to a small group of discontented individuals, were dealt with promptly. For the most part, Puerto Rico is free from serious crime. Holdups and payroll robberies are practically unknown.

THE PHILIPPINE ISLANDS

BY CREED F. COX

BRIGADIER GENERAL, U. S. A.; CHIEF, BUREAU OF INSULAR AFFAIRS,
WAR DEPARTMENT

POLITICAL AND GOVERNMENTAL STATUS

The Independence Act approved March 24, 1934, commonly referred to as the Tydings-McDuffie Act, changed the name of the government of the Philippine Islands to the government of the Commonwealth of the Philippines. The sovereign relationship between the United States and the Philippines continues the same as heretofore. Under the program provided in the Independence Act complete independence will be established in 1946. In order to understand clearly the relationship now existing, it should be borne in mind that under the organic act of the Philippine Islands of 1916 the Governor General occupied a dual position, namely, that of the representative of the President of the United States in the Islands and chief executive of the Insular government. Under the Independence Act this dual relationship is separated and now resides in two persons; the chief executive of the Islands who is elected by the Filipino people and the United

State High Commissioner to the Philippines who is the representative of the President in the Islands.

CITIZENSHIP

Citizens of the Philippines continue as heretofore to owe allegiance to and are under the protection of the United States but are not citizens thereof. Citizens of the Philippine Islands, who have had honorable service of not less than three years in the United States Navy or Marine Corps or the Naval Auxiliary Service, may become citizens of the United States. By an act of Congress approved June 24, 1935 (Public No. 162, 74th Congress) the provision for eligibility to United States citizenship was extended to veterans of the World War. The Independence Act of 1934 provides that for purposes of immigration the Philippine Islands shall be considered as a separate country and the number of immigrants that may enter the United States from the Islands for each fiscal year is limited to a quota of 50.

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GOVERNMENTAL POWERS AND LIMITATIONS

The government of the Commonwealth of the Philippines is granted broad autonomy as regards local affairs. Additional powers granted by the Independence Act include the election of the chief executive by the people, reorganization of the government under the constitution, and power to legislate with reference to public lands, timber and mining. Formerly legislation on these subjects required the approval of the President of the United States before becoming effective.

Section 2 of the act enumerates in specific terms the general powers and authority reserved to the United States during the period of the Commonwealth government. The public debt may not exceed limits now or hereafter fixed by the Congress of the United States; acts of the National Assembly affecting currency, coinage, imports, exports, and immigration do not become effective until approved by the President of the United States; foreign affairs remain under the direct supervision and control of the United States; all acts passed by the National Assembly must be reported to the Congress of the United States; decisions of the courts of the Commonwealth government are subject to review by the Supreme Court of the United States; citizens and corporations of the United States enjoy in the Commonwealth of the Philippines all the civil rights of citizens and corporations of the Philippines. There is also reserved to the United States the right to intervene under certain conditions set forth in the act.

GOVERNMENT ORGANIZATION

The Commonwealth government celebrated the first anniversary of its inauguration on Nov. 15, 1936. During the first year extensive changes were made in the organization of the government. All officials in the former Insular government appointed by the President of the United States were replaced by appointees of the President of the Philippines. The former Philippine legislature was

a bicameral body consisting of a senate and house of representatives. The present National Assembly is a unicameral body initially consisting of 96 members.

UNITED STATES HIGH COMMISSIONER

Congress provided funds for the necessary housing for office and residence purposes of the High Commissioner, which will be the permanent quarters of the United States representative in the Islands and will be available for diplomatic purposes of the United States after independence is established. Work on this project is already well under way. The location is on the waterfront in the city of Manila which in the past 35 years has become one of the most attractive waterfronts in all the Orient.

NATIONAL DEFENSE

The first special session of the National Assembly, which was called immediately after the inauguration, was devoted almost entirely to the enactment of legislation providing for the creation of new agencies in the government and the reorganization of the old ones. The first act passed was the National Defense Act. This act embodies the principle of obligatory military service, and contains the following provisions:

"All Filipinos are liable to military service.

"The obligation to undergo military training shall begin with youth in school, commencing at the age of ten years, and shall extend through his schooling until he shall reach the age of eighteen years. At this age he shall enter the Junior Reserve to which he shall be assigned until he is twenty-one years of age when he shall become subject to service with the colors, and thereafter with the Reserve Force until he shall reach fifty years of age.

"All school girls shall receive such instruction and training as the Chief of Staff may deem necessary for auxiliary service."

The Philippine Army is to consist of a Regular Force of about 20,000

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men and a Reserve Force. The Regular Army has a dual mission—training the Reserve Force for national defense and performing the duties of a national police for the maintenance of peace and order. The constabulary police force of the former insular government has been transferred to the Regular Army. Police duties are carried out under the direction of the Provost Marshal General. It is contemplated that there will be 40,000 men trained annually for the Reserve Force.

LEGISLATION

Laws passed at the first special session of the National Assembly include provisions for a National Economic Council to survey the resources of the country and submit a plan for their development, a law empowering the President of the Philippines to reorganize the government reporting the measures taken in this connection to the National Assembly at its next session, and a law providing for the reorganization of the Supreme Court and other courts in the Philippines. The Supreme Court as formerly organized, consisting of 11 members appointed by the President of the United States, continued to function until Feb. 1, 1936. As reconstituted, its membership is reduced to seven members appointed by the President of the Philippines. An intermediate court of appeals was created, consisting of eleven members appointed by the President of the Philippines.

Important legislation in 1936 provided certain revenue bills designed to maintain a balanced budget to meet the increasing requirements of the Commonwealth government, provided for a \$5,000,000 public works bill, for the regulation of the mining industry, for the liquidation of existing pension funds and the substitution of a government insurance measure, and for taking a census. Another law made provision for the holding of a plebiscite on woman's suffrage, which, under the constitution, must take place within two years after the adoption of the constitution. The right of suffrage will

be extended to women if 300,000 of those possessing the necessary qualifications vote affirmatively on the question.

FINANCES

Public Debt.—At the end of 1935 the public debt was small; the sinking funds for all outstanding bonded indebtedness has been regularly provided for and segregated; the currency reserves were in excess of the legal requirements for the currency in circulation. The cash on hand and on deposit in the United States amounted to \$78,439,071.85. A net reduction of \$1,149,000 in the total outstanding bonded indebtedness of the Philippine Islands was made for the year 1935. On Dec. 31, 1935, the outstanding bonded indebtedness of the Insular Government amounted to \$57,264,850, and that of its provinces and municipalities to \$9,008,850, or a total of \$66,273,700. If from this total there be deducted collateral bonds with a face value of \$6,698,850, issued against provincial and municipal bonds, the net amount of outstanding bonds on Dec. 31, 1935, was \$59,574,850.

Revenues and Expenditures.—The following figures relate to the fiscal year ended Dec. 31, 1935: The total income of the central government was \$41,419,640.66, an increase of \$2,082,264.99 over 1934. The total expenditures amounted to \$37,966,596.27, an increase of \$2,606,801.72 over those in 1934. The total current surplus as of Dec. 31, 1935, was \$41,042,639.10, compared with \$37,589,594.71 in 1934, an increase of \$3,453,044.39. This amount represents the excess of income over expenditures for the fiscal year.

TRADE

The total external trade of the Philippines with the United States and foreign countries for 1935 amounted to \$179,769,530 and showed a decline of \$14,241,217, or 7% from 1934. Exports (not including gold) were valued at \$94,245,680, decreasing 14%, while imports amounting to \$85,523,850 were 2% higher. Gold produced

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from Philippine mines shipped to the United States in 1935 amounted to about \$15,000,000. Approximately 72% of the trade was with the United States. Goods brought from the United States represented 64% of the total incoming merchandise, and shipments to the United States amounted to 79% of the total exports from the Philippines. Shipments of sugar in 1935 fell far below those of 1934, due to shipments to the United States in 1934 being in excess of the quota established under the Jones-Costigan Act, which excess had to be absorbed in the 1935 quota. The total shipments were only 508,076 long tons as compared with 1,134,626 long tons in 1934. Coconut products, consisting of copra, coconut oil, and desiccated coconut, showed a substantial increase over 1934, and amounted to nearly a third of the value of all exports. Higher prices prevailed for all the principal exports, with the exception of cigars, leaf tobacco, and cordage.

Upon the inauguration of the Commonwealth government duty-free quotas of sugar, coconut oil, and cordage became effective. All sugar in excess of 850,000 long tons, and all coconut oil in excess of 200,000 long tons, that may be shipped into the United States from the Philippines in any calendar year, are now subject to the same rates of duty as are imposed upon like articles from foreign countries. The entry of cordage into the United States from the Philippine Islands in each 12-

month period is limited to 6,000,000 pounds, which enters duty free.

GENERAL CONDITIONS

Conditions as to public works, education, sanitation and health call for no special comment. Governor General Murphy during his two and a half years of service as Governor General inaugurated a number of reforms, laying particular stress on a balanced budget in governmental expenditures and the development of social welfare both in urban and rural communities. This work embraced efforts to educate the people, 90% of whom are agricultural, in the development of home gardens, etc. that would produce a better balanced diet. One of the very important projects undergoing construction at the close of his administration, which has since been completed, was a modern water filtration plant for the city of Manila.

AVIATION

The outstanding event of the year in transportation was the establishment by Pan American Airways of trans-Pacific airmail between the United States and the Philippine Islands. The first round trip was made in November, 1935. There is now being maintained a weekly schedule for both mail and passengers in both directions from San Francisco to Manila *via* the Hawaiian Islands, Midway Island, Wake Island and Guam. Mail is now being received in Washington from Manila in about seven days.

THE VIRGIN ISLANDS

BY ERNEST GRUENING

DIRECTOR, DIVISION OF TERRITORIES AND ISLAND POSSESSIONS,
DEPARTMENT OF THE INTERIOR

GOVERNMENT

The islands in this group, of which the largest are St. Croix, St. Thomas, and St. John, were purchased by the United States from Denmark in 1917. Until 1931 they were under the jurisdiction of the Navy Department. In that year they were transferred

to the Department of the Interior and since then have enjoyed the status of "Island Possession" within the Division of Territories and Island Possessions in the Department of the Interior. On June 22, 1936, Congress passed an Organic Act for the Virgin Islands giving a larger

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amount of self-government to the two Municipal Councils of the Islands and creating a Legislative Assembly for the group.

ECONOMIC REHABILITATION

A program of economic rehabilita-

tion, begun under the first civilian Governor, Paul M. Pearson, has been extended and further developed under his successor, the present Governor, Lawrence W. Cramer.

The following indices reveal the upward economic trend:

	Fiscal Years			
	1933	1934	1935	1936
Acres in cane cultivation.....	4,686	4,505	5,385	6,785
Tons of sugar produced.....	4,125	4,088.42	1,670.25	3,730
Gallons of rum produced.....	—	70,000	245,000	239,033
Arrivals of ocean-going ships in St. Thomas, number of ships:	469	498	549	647
Tonnage.....	1,849,255	1,938,637	2,568,452	3,017,682
Value of bunker oil and coal imported.....	\$341,182	\$338,259	\$366,267	\$600,776
Sale of native products by Virgin Islands Cooperatives.....	\$4,578	\$9,330	\$23,371	\$26,213

With the further development of the economic rehabilitation program, it may confidently be expected that the Virgin Islands will be enabled to meet their own expenses. The revenues of the Municipal governments of the Islands have risen from approximately \$193,000 in 1933 to \$288,000, while the Federal Government's contribution towards the budgets of the municipalities has been reduced from approximately \$236,000 in 1933 to \$175,000, with a further reduction of \$20,000 in the current fiscal year.

SUGAR AND RUM

One of the principal features of the economic program is sugar production and rum manufacture by The Virgin Islands Company, a wholly government-owned corporation, which cultivated in 1936 approximately 3,000 acres of land, and produced 239,033 gallons of rum in addition to growing tomatoes and rebuilding estate villages for housing its workers. The various activities of this government agency have, within two years, eliminated practically all unemployment in St. Croix.

HOMESTEADING

Since 1932, 3,639 acres of land have been purchased for homestead projects in the Virgin Islands, of which 1,569 acres are under contract to 268 homesteaders and approximately 1,200

acres are being cleared, surveyed, and made available for allotment to 105 additional applicants. Sixty-four new or reconstructed houses have been built, and 47 additional houses are under construction for the occupancy of homesteaders.

TOURIST AND WINTER RESIDENTS

While in St. Croix the necessity has been for agricultural revival provided for by the activities of The Virgin Islands Company, in St. Thomas, whose future more directly lies with the development of the tourist-trade, the Government opened on Jan. 1, 1935, the Bluebeard Castle Hotel, whose operation has proved highly successful. This hotel has operated at capacity during the past winter season and over 100 prospective guests have had to be turned away on account of lack of space. Improvements and extensions now under construction will increase the capacity by 60%.

Privately operated hotels were filled to capacity during the 1935-36 winter season and the demands for accommodations not only at hotels, but for rental of cottages and houses, have been greatly in excess of available space. To meet this increasing demand for tourist accommodations, the St. Thomas Tourist Development

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Company has been organized by private interests and has purchased an 1,800-acre estate in the Island of St. John with a view to constructing cottages thereon.

URBAN HOUSING

The Housing Division of the Federal Emergency Administration of Public Works is carrying on three housing projects, one in each of the towns of the two larger islands. In St. Thomas the program contemplates the construction of 30 buildings with 134 rooms; in Christiansted 15 buildings with 60 rooms, and in Frederiksted 20 buildings with a total of 80 rooms.

EMERGENCY CONSERVATION WORK

This program consists of two 100-men camps, one located in St. Croix and the other in St. Thomas. Among the numerous beneficial projects which have been carried on are the reconstruction of a scenic road in St. Thomas, the development of adequate recreation areas, reforestation, fire control, and soil erosion control activities.

ROAD PROGRAM

To provide scenic roadways which will add to the attractiveness of the islands to tourists and winter residents, to construct and reconstruct economically important highways in a way to reduce future maintenance costs, and to increase employment, an appropriation of \$192,000 was made available from WPA funds to improve, rebuild, and construct roads in the Virgin Islands.

In the island of St. Thomas the project consists of rebuilding, regrading and paving with asphaltic macadam four miles of two-lane highway, and constructing 1.5 miles of new dirt road along the north mountain

side. Four miles of dirt country roads will also be regraded, surfaced and drained. In St. John the work consists of clearing of vegetation, construction of culverts, opening of drains, and grading extended sections of trails which are the only roadways in that island. In St. Croix, the Centerline highway between Christiansted and Frederiksted is being resurfaced for its entire length of 15 miles. This program will provide employment for an average of 350 persons through June 30, 1937.

NON-FEDERAL PROJECTS

The Federal Emergency Administration of Public Works has made available to the municipalities of St. Thomas and St. John, a grant of 45% of the total cost of a project to repair, improve and extend the salt water flushing system in the city of St. Thomas and to widen and pave with bituminous macadam surfacing the streets within the city limits. To this allotment the Municipality has added \$24,444 from internal revenue tax receipts, the total estimated cost of the project being \$44,444. Late in the fiscal year, 100% grants of Federal funds were allocated to the Municipalities of St. Thomas and St. John in amount of \$50,000 for construction of surface drains and sewage disposal system improvements, and to the Municipality of St. Croix in amount of \$41,939 for construction of water supply and surface drain improvements.

COOPERATIVES

The Virgin Islands Cooperatives has continued to progress steadily. This organization has furnished work to a considerable number of persons and its operations have been profitable, enabling the workers to receive a 3% bonus on the amount of their earnings for the year.

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GUAM AND AMERICAN SAMOA

By RALPH OTIS DAVIS

COMMANDER U.S.N.; OFFICE OF ISLAND GOVERNMENTS, NAVY DEPARTMENT

GUAM

Historical.—The Island of Guam, at the southern end of the Marianas group and 1,500 miles east from Manila, was discovered March 6, 1521, by Magellan while on his voyage around the world. He named the group of islands the "Ladrones" (robbers), indicating a rather bad opinion of the original natives, but the name was ultimately changed to "Las Marianas" in honor of Maria Anna of Austria, the Queen of Philip IV of Spain. The first Spanish missionaries landed at Guam on June 15, 1668, and Spanish rule was inaugurated to continue until June 21, 1898, when the island was captured by the *U.S.S. Charleston*, commanded by Captain Henry Glass, U. S. Navy. At the termination of the War with Spain, Guam was formally ceded to the United States by the Treaty of Paris.

Government.—The present form of government dates from Dec. 23, 1898, when President McKinley issued an Executive Order placing the Island of Guam under the control and jurisdiction of the Navy Department. A naval officer is commissioned by the President as governor and the same officer receives orders from the Secretary of the Navy as Commandant of the Naval Station, Guam, which station includes the entire island. The Island Government, under the Governor, is organized with all the usual governmental departments, headed by naval officers. Civil regulations with the force and effect of law are issued by the governor. There is a Guam Congress, composed of representatives of the people and appointed by the governor, which assembles periodically. It has no legislative authority, but acts entirely in an advisory capacity. The present Governor of Guam is Commander Benjamin V. McCandlish, U. S. Navy, and the seat of the

island government is in the city of Agana.

Population.—On July 1, 1936, the total population of Guam was 21,496 divided as follows: native born 20,047, foreign born 764, naval establishment and families 685. The native born population increased 592 during the fiscal year 1936. The natives are known as Chamorros and are of Malayan origin with strains of Spanish, Mexican, Chinese, American and Filipino blood. The official language is English but the ancient Chamorro tongue, corrupted by Spanish, English and dialects of the Philippines, is still in general use. Under American jurisdiction the natives are regarded as wards of the United States Government and are classified as citizens of Guam. They have been practically unaffected by the political, economic and industrial problems of the outside world and are a peaceful and contented people. No alien may own land in Guam and all sales of land must have the approval of the island government.

Agriculture.—Nearly every native family owns and cultivates a small farm which supplies the principal necessities of food, and agriculture presents the best opportunity for achieving a self-supporting populace. The Island Government Department of Agriculture is engaged in developing new and better crops and in teaching the people modern and scientific farming methods. An experimental farm is maintained for stock breeding and agriculture development, seeds are issued, and irrigation projects are extended. Copra is the principal crop and the one item of export at present, but the extension of rice and tobacco growing, together with increased production of the usual tropical fruits and vegetables, are given every possible encouragement. An excellent public market is maintained at Agana.

GUAM AND AMERICAN SAMOA

Trade and Commerce.—The copra export for the fiscal year 1936 was 5,208,469 pounds valued at \$94,512. The balance of trade against Guam for the fiscal year 1936 was \$421,214, which was \$78,017 less than the previous year. Very few merchant ships call at Guam. During the fiscal year 1936, 59 vessels entered and cleared, including 16 government vessels and 27 aircraft clipper ships of the transpacific service. 14,237,407 pounds of incoming and 5,534,520 pounds of outgoing commercial cargo were handled. The inauguration of Pan-American transpacific air service through Guam marks an important new connection with the outside world.

Banking.—The Bank of Guam, established by an Executive Order of the Governor in 1915, is the only bank in Guam. The capital stock of \$15,000 is owned by the Island Government and the bank is operated for commercial banking as a division of the Treasury Department of that government. During the fiscal year 1936 the bank financed shipments of merchandise imported by the merchants of Guam to the value of \$398,159. Gross earnings of the bank for the fiscal year were \$28,769, and net earnings were \$22,402.

Health and Sanitation.—The general health and sanitation conditions in Guam are good, and there was no disease in epidemic form during the past year. There are no civilian physicians or hospitals on the island and the government hospitals for the people are operated by naval surgeons and nurses and native nurses trained by the Naval personnel, who treat the people without charge. One civilian dentist is maintained by the island government. The entire population is benefited by the sanitary instruction, training of nurses and detection and isolation of infectious diseases. Schools are visited and children are examined physically by a health officer on an average of twice yearly.

Education.—The general policy of the naval island government, with reference to educational activities, has been formulated as follows: To

enlighten the minds of the people by means of education and to stimulate their development through training and self-discipline. In accordance with that general policy, academic instruction includes the usual grammar school subjects with special emphasis placed on teaching the people the English language. Industrial and agricultural training is considered to be of paramount importance in connection with developing and encouraging the people to a greater degree of economic independence. Evening courses of study are offered in all schools for the benefit of adults. During the past year the total enrollment of the day schools was 4,384 and of the evening adult classes was 1,300. There were 25 academic day schools with 167 teachers, five industrial schools with 11 teachers, and one agricultural school with two teachers. The evening adult classes required the services of 42 teachers. All teachers employed in the various schools were natives with special teacher's training.

AMERICAN SAMOA

Historical.—The first record of the Samoan Islands is believed to have been that made in 1722 by Jacob Roggeveen in command of a Dutch expedition to Java *via* Cape Horn. That navigator called his discovery the Baumann Islands and learned very little about them as he did not land. In 1768 they were visited by the French circumnavigator, Bougainville, who named them the Navigators Islands, a name generally used until many years after Captain Charles Wilkes, U. S. Navy, visiting them in 1839, first called them the Samoan Islands. Native wars and international controversies persisted through the 19th Century until, on Dec. 2, 1899, the United States, Great Britain, and Germany signed a treaty by which the Samoan Islands west of longitude 171° W. were allocated to Germany and those east of that line to the United States. On April 17, 1900, the High Chiefs of Tutuila voluntarily ceded the islands of Tutuila and Aunuu to the United States and the islands of the Manua

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group were ceded by their chiefs on July 16, 1904. By Joint Resolution of Congress approved March 4, 1925, the sovereignty of the United States was extended to Swain's Island, 210 miles to the northward of Tutuila, and that island was made a part of American Samoa.

Government.—On Feb. 19, 1900, the present form of government was established when a Presidential Executive Order placed the islands of American Samoa under the jurisdiction of the Secretary of the Navy. They are under the immediate administration of a naval officer who is commissioned by the President as Governor of American Samoa and that officer is also Commandant of the Naval Station, Tutuila. The Island Government is organized with all the usual governmental departments, and in addition there are native district governors and native county and village chiefs who take an important part in administrative affairs. An annual fono, or general meeting, is attended by the Chiefs and delegates of the people, at which meeting the Governor imparts information and receives recommendations and suggestions. The laws of American Samoa are embodied in a codification of the Regulations and Orders for the Government of American Samoa as issued by the Governor. The political situation continues to be excellent and there are no activities in opposition to the government. The policy of the Island Government and Navy Department, briefly expressed as "Non-exploitation of the natives, non-alienation of the lands, and Samoa for the Samoans" is carefully followed in furthering the best interests of the people. The present Governor is Captain M. Milne, U. S. Navy, and the seat of the Naval Island Government is Pago Pago, Tutuila.

Population.—On July 1, 1936, the total population, including all islands of American Samoa, was 11,753, divided as follows: Polynesians and those of part Polynesian blood, 11,474; Caucasians attached to the naval establishment, 237; other Caucasians, 34; Japanese, 4; Chinese, 1;

and Filipinos, 3. The present population represents an increase of more than 100% since 1900, the increase being due to the cessation of internecine warfare and the sanitary and medical work of the medical officers of the United States Navy. Under the paternal island government the people are happy and peaceful. Samoan customs and culture have been preserved and respected by the authorities.

Agriculture.—The development of agricultural and industrial interests in a race not given to such pursuits has been difficult. However, in addition to the tropical fruits and vegetables native to the islands, various trees and crops have been introduced and developed by means of an Island Government experimental farm, the value of which is gradually being realized by the natives. The most important product and export is copra, and the Island Government, at the request of the people, handles the sale of that crop. A severe hurricane on Jan. 16, 1936, caused great damage to property and crops, although no loss of life occurred. Some food shortage resulted but the situation has not been serious.

Trade and Commerce.—Practically the only means of trade with the rest of the world is provided by the Matson Navigation Company which maintains a four-week schedule between San Francisco, Honolulu, Pago Pago, Suva, Fiji and Sydney, carrying passengers, mail and freight. During the fiscal year 1936, 1,193 pounds of copra valued at \$54,669 were exported. Total exports and imports for the fiscal year amounted to \$78,497 and \$173,144, respectively.

Banking.—The only bank in American Samoa is the Bank of American Samoa, founded in 1914 by Executive Order of the Governor. That bank conducts a general commercial and savings business, its capital stock of \$25,000 is owned by the Island Government and its principal officers and directors are naval officers of the Island Government. The bank is in sound financial condition and

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the volume of its business has increased steadily.

Health and Sanitation.—Public health and sanitary conditions are maintained at a high standard by the naval medical officers. There are no civilian physicians in the islands and the medical officers of the Department of Health of the Island Government treat the entire native population without cost to the people. Hospitalization is modern and native nurses are trained by the naval personnel.

Education.—The public school at-

tendance at the end of the past school year was 2,208. There are 20 schools under the local Department of Education employing 62 teachers, all but six of whom are natives who have been trained as teachers. Special emphasis is given to instruction in the English language, health and sanitation, Samoan arts and crafts, agriculture, and manual and domestic arts. In addition to the public schools there are five parochial schools conducted by missionaries of various denominations with a total attendance of about 500.

THE DISTRICT OF COLUMBIA

By W. REED WEST

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THE "RED RIDER"

In the District of Columbia Appropriation Act applying to the fiscal year ended June 30, 1936, there was included a bit of legislation which has attracted national attention. As a "rider" on an appropriation bill a single objection would have thrown it out, but it slipped by under unanimous consent. Probably only a few of the members of Congress at the time realized its significance or even knew of its existence. "District day" is a dull one for most members of Congress. The "rider" in question read: "*Provided*, That hereafter no part of any appropriation for the public schools shall be available for the payment of the salary of any person teaching or advocating communism."

The legislation appears to have originated in a conference committee. The House of Representatives had eliminated an appropriation for "character education," which had been restored by the Senate. In the conference that was called to reconcile differences between the House and Senate bills, the item providing funds for character education was retained, but it appears that it was also agreed that there should be a provision to the effect that such funds should not be used to pay the salary

of anyone who advocated communism. However, as actually adopted the limitation was made to read as quoted above. In this form it applied to the whole school appropriation. Insertion of the word "hereafter" made it permanent legislation to be applied not only to the present but to future appropriations. Moreover, not only the advocacy of communism but its teaching was prohibited.

Although the word "communism" as used in such legislation is not altogether clear, the greatest controversy centered around the meaning of the prohibition upon the "teaching" of communism. A report by the Corporation Counsel of the District held that the word "communism" referred to the philosophy of the present-day parties composing the Communist Internationale. The prohibition upon the "teaching" of communism was held not to prevent the mere presentation of facts concerning communism provided there be no shadow of favor or support of the doctrine.

Perhaps the debate would have simmered down after this had not the Comptroller General of the United States shortly thereafter ruled that employees of the schools must, in order to receive their salaries, sign

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a statement "without reservation" that they did not "teach or advocate" communism during the period to which the salary applied. This was interpreted as ruling that the facts concerning communism could not be taught. At any rate, the teachers generally felt that it would be dangerous to present the facts about communism, and avoided any discussion of the Soviet Government.

Hearings before the subcommittee on education of the House District Committee brought out no evidence of the advocacy of communism by teachers. The Board of Education made an examination of textbooks used in the schools. Some citizens had objected to certain texts, involving authors of high standing. While such texts in proper places referred to the soviet system, no instance of the advocacy of communism was found. The House District Committee reported favorably the Sisson bill to repeal the "red rider." The Committee held that there had been no indoctrination of communism in the schools, that there was no necessity or excuse for inserting the rider into an appropriation bill, that it did not represent the wish of Congress, that there appeared to be no similar law in any of the States, that the provision was breaking down the morale of the teachers, that the law was giving the communists free advertising and exploitation, and that it was contrary to the traditional American system of conducting public schools. It was suggested that this law might open the way to the injection of politics into the schools so that a party in power would prescribe a course of study favorable to itself. However, this bill was not acted upon by the House. It is not unreasonable to expect that agitation for its repeal will continue.

FEE OFFICES

The year 1936 marked the abolition of the last "fee office" in the District. The only remaining office of this sort had been that of inspector of steam boilers, who received \$5 from the owner for each annual in-

spection. An Act (approved June 25, 1936) set up in his place a boiler inspection service in the Engineer Department, to include a boiler inspector and any other needed employees, all appointed by the Commissioners. Fees for certificates of inspection are provided for, but are payable to the Collector of Taxes. The Commissioners are authorized to make regulations under the Act.

UNEMPLOYMENT COMPENSATION

The National Social Security Act exempted from its tax provisions religious and educational institutions not operated for profit. The District Unemployment Compensation Act (see THE AMERICAN YEAR BOOK for 1935) did not except these institutions. An amendment (approved Feb. 13) now makes the exemption. The House District Committee in a strongly worded report recommending the amendment stated that failure to make the exemption was a direct invasion of the freedom of privately administered educational institutions and freedom of religion, and that it left them less free by increasing their financial obligations. The Committee expressed the opinion that the Act without the exemption was the beginning of a trend that might destroy privately administered educational institutions and curtail religious freedom. "The District of Columbia now creates an unfortunate precedent which will be seized upon by all advocates of the totalitarian state and all individuals and groups who, however well meaning may be their aspirations, are insensitive to the demands of liberty."

COMMERCIAL AIRPORT

The present commercial airport facilities for Washington are not considered sufficient for future needs. There has been a long controversy concerning the choice and purchase of a proper site for this purpose. After much disagreement between the Senate and the House of Representatives upon the proper method of procedure, a Commission of nine members has now been set up which

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is to select a site and make a confidential report upon its decision to the Senate and House. This report will not necessarily conclude the controversy but presumably the Houses will be guided by its report.

VOCATIONAL SCHOOLS

The vocational schools of the District originally were established as part of the elementary school system when that system included eight grades. With the establishment of junior high schools the vocational schools were not given the status of junior high schools although they continued to deal primarily with students of seventh and eighth grade status. An amendment (approved April 10) to the teachers' salary act has now placed the vocational schools upon a junior high school level, increasing their course of study from two to three years. The Board of Education also is authorized to establish occupational schools on the elementary school level. The vocational courses now carried in the senior high schools are not affected.

MINOR LEGISLATION

The penalty for reckless driving was increased from a maximum of \$100 or imprisonment for not over 30 days for first offenses, to a maximum of \$250 or imprisonment for

not over three months, or both. It had been thought that the old penalties were sufficiently low that jury trial could not be demanded, but the Supreme Court held in *District of Columbia v. Colts* (282 U. S. 63) that reckless driving was an act of such obvious depravity that it could not be called a petty offense, and that jury trial could be demanded. There appeared to be no good reason, therefore, to keep the penalty low since jury trial could be demanded in any case.

In another act, power was given the Commissioners to revoke or suspend the right of non-residents to operate motor vehicles in the District, comparable to the power already possessed over residents. Previously this power had applied in the case of non-residents only in cases of conviction of driving under the influence of intoxicants or drugs. Other acts extended the bribery laws so as to cover bribes to any officer for the purpose of influencing his official actions, gave to trust companies the right of perpetual succession, simplified the procedure in the sale of property bid in at delinquent tax sales, and changed the law upon the sale of property in the hands of the property clerk of the police department.

PART THREE

GOVERNMENTAL FUNCTIONS

DIVISION VII

PUBLIC FINANCE AND TAXATION

NATIONAL FINANCE AND THE PUBLIC DEBT

BY D. W. ELLSWORTH

EDITOR, *The Annalist*

THE NET PUBLIC DEBT

At the end of the calendar year 1936 the net public debt of the United States (the gross debt less the Treasury's balance in the general fund) amounted to \$32,501,000,000, a new all-time high record. In the calendar year the increase in the net debt was \$4,152,000,000, as compared with an increase of \$2,434,000,000 in the calendar year 1935, \$3,127,000,000 in 1934 and \$2,074,000,000 from Feb. 28, 1933, to Dec. 31, 1933, making the net deficit incurred by the Roosevelt Administration \$11,787,000,000.

The fact that the 1936 calendar year deficit was substantially larger than that of any previous year was largely, however, the result of the action of Congress, over the none too vigorous protest of President Roosevelt, in ordering the immediate payment (June, 1936) of the veterans' adjusted service certificates. This placed an additional financial burden on the Treasury of \$1,673,500,000. Even allowing for the veterans' payments, however, the excess of expenditures over receipts continued, in 1936, at about the average rate of 1934 and 1935.

ANALYSIS OF FEDERAL REVENUES

The Treasury keeps its books by fiscal years ended June 30; hence it

is more convenient to analyze the various receipts and expenditures by comparing those for the fiscal year ended June 30, 1936, with those for the fiscal year ended June 30, 1935, and then to supplement the fiscal year figures with a comparison of the results of the six months ended Dec. 31, 1936 with those of the corresponding period of 1935. This is done in Table II.

The figures speak for themselves, with this exception: In preparing this table several items in the Daily Treasury Statement have been rearranged in a way which it is believed will reflect more accurately for the purposes of most readers the trend of receipts and expenditures. The desirability of doing this arises from the fact that in recent years the Treasury has classified a number of identical items under two headings: General Expenditures, and Recovery and Relief Expenditures. In the statement given in Table II, identical items have been combined. In Table II also, in order to avoid confusion with the official Treasury terminology, the regular expenditures of the government (those for regular departments established before the New Deal) have been called Regular Expenditures, and those created by the Roosevelt administration for the

NATIONAL FINANCE AND THE PUBLIC DEBT

promotion of recovery and relief, Special Expenditures.

As a result of improved business conditions the Federal revenues continued to increase. In the fiscal year 1936, despite the loss of processing taxes on farm products, they exceeded, in the aggregate, those of any preceding fiscal year back to 1921. In the first half of the fiscal year 1937 they showed a further increase.

TABLE I. PUBLIC DEBT OF THE UNITED STATES
(Millions of Dollars)

1934	Gross Debt	General Fund Balance	Net Debt	Monthly Net Change
Jan. 31....	25,071	1,537	23,531	+ 743
Feb. 28....	26,052	4,902	21,150	-2,381
Mar. 31....	26,157	4,818	21,339	+ 189
Apr. 30....	26,118	2,294	23,834	+2,495
May 31....	26,155	2,022	24,133	+ 299
June 30....	27,053	2,582	24,471	+ 338
July 31....	27,189	2,472	24,717	+ 246
Aug. 31....	27,080	2,137	24,943	+ 226
Sept. 29....	27,190	2,193	24,997	+ 54
Oct. 31....	27,188	1,812	25,376	+ 379
Nov. 30....	27,299	1,597	25,701	+ 325
Dec. 31....	28,479	2,564	25,915	+ 214
1935				
Jan. 31....	28,476	2,319	26,156	+ 241
Feb. 28....	28,526	2,081	26,445	+ 289
Mar. 30....	28,817	2,446	26,372	- 73
Apr. 30....	28,668	1,935	26,733	+ 361
May 31....	28,638	1,957	26,682	- 51
June 29....	28,701	1,841	26,860	+ 178
July 31....	29,120	1,789	27,331	+ 471
Aug. 31....	29,033	1,475	27,558	+ 227
Sept. 30....	29,421	1,799	27,623	+ 65
Oct. 31....	29,462	1,473	27,989	+ 366
Nov. 30....	29,634	1,434	28,200	+ 211
Dec. 31....	30,557	2,209	28,348	+ 148
1936				
Jan. 31....	30,516	2,004	28,512	+ 164
Feb. 29....	30,520	1,767	28,753	+ 241
Mar. 31....	31,459	2,866	28,593	- 160
Apr. 30....	31,425	2,442	28,983	+ 390
May 31....	31,636	2,358	29,278	+ 295
June 30....	33,779	2,682	31,097	+1,819
July 31....	33,444	2,230	31,214	+ 117
Aug. 31....	33,380	1,904	31,477	+ 263
Sept. 30....	33,833	2,188	31,645	+ 168
Oct. 31....	33,833	1,764	32,069	+ 424
Nov. 30....	33,794	1,406	32,389	+ 320
Dec. 31....	34,407	1,906	32,501	+ 112

Income tax receipts constituted 35 per cent of total receipts in the fiscal year 1936 as compared with 29 per cent in 1935. Miscellaneous internal revenue constituted 49 per cent as against 43 per cent in 1935.

Income tax receipts benefited not

only from increasing business activity in the preceding year but also from the full effect of the Revenue Act of 1934. Another factor in the increase was a change in Treasury tactics with respect to the administration of depreciation allowances. The Bureau of Internal Revenue also made special, in some cases, rather spectacular efforts to collect alleged back taxes, especially from certain wealthy individuals.

Approximately 93 per cent of receipts from miscellaneous internal revenue taxes came from the following sources in the fiscal year 1936: tobacco manufactures, manufacturers' excise levies, distilled spirits and wines, fermented malt liquors, estates, gifts and capital stock taxes. Estate tax collections were higher, reflecting the higher values of taxable estates and the full effect of the Revenue Act of 1934. Collections from the gift tax doubled.

Customs receipts were higher on account of heavier imports of certain dutiable commodities, especially wool, metals and agricultural products. Imports of distilled liquors were also higher, but duties collected were lower on account of rate reductions under various reciprocal tariff agreements.

A further rise in receipts was expected at the end of the calendar year 1936, as shown by the summary of the general budget estimates for the fiscal years 1937 and 1938, included herewith as Table III. As shown by Table III, total receipts of the Federal Government in the fiscal year 1938 are expected to reach the staggering sum of \$7,294,000,000. That sum, if realized, will be greater than total ordinary receipts in any other year in the country's history, including the World War and immediate post-war years with their crushing burdens of taxation. It is quite apparent that the American public has not even begun to pay for the extravagance of the New Deal. It is by no means improbable, however, that the seven billion dollar total will not be realized. As stated by President Roosevelt in the annual

VII. PUBLIC FINANCE AND TAXATION

budget message to the Congress, the estimate is based on a continuation of improvement in economic conditions "at the present rate." Many statisticians, even though they believed the country might easily be entering a period of general prosperity, found it difficult if not impossible to visualize the continuation, as far ahead as 1938, of business expansion at the average rate that prevailed in 1936.

At the same time the Treasury will be favored by the imposition, beginning in January, 1937, of the new Social Security taxes, which were expected to provide additional revenue of \$324,600,000 in the fiscal year 1937

and \$774,800,000 in the fiscal year 1938. This is a direct tax on the poor. The rich, even if they were inclined to do so, could derive no satisfaction from this broadening of the tax base, however, in view of the fact that income tax contributions were estimated at \$2,372,900,000 for 1937 and \$3,365,300,000 for 1938, as compared with actual collections of \$1,426,575,433 in the fiscal year 1936.

ANALYSIS OF FEDERAL EXPENDITURES

From the standpoint of Federal expenditures, both the fiscal year 1936 and the first half of the fiscal year 1937 turned out to be great successes.

TABLE II. RECEIPTS AND EXPENDITURES

(Thousands of Dollars)

Receipts	Six Months Ended Dec.		Year Ended June 30	
	1936	1935	1936	1935
Internal Revenue:				
Income tax.....	705,563	554,815	1,426,575	1,099,119
Miscellaneous internal revenue.....	1,133,598	974,554	2,009,627	1,657,192
Processing tax on farm products.....	3	65,072	76,649	521,380
Total internal revenue.....	1,839,164	1,594,441	3,512,851	3,277,691
Customs.....	217,390	190,168	386,812	343,353
Miscellaneous receipts.....	101,752	117,400	216,294	179,424
Total receipts.....	2,158,305	1,902,010	4,115,957	3,800,467
Regular Expenditures				
Departmental.....	255,484	222,340	442,994	355,993
Public buildings.....	13,049	6,547	15,045	25,269
Panama Canal.....	6,253	5,165	11,448	8,766
Postal deficiency.....	22,528	30,015	86,039	63,970
Retirement funds (United States share).....	46,735	40,662	40,662	21,009
District of Columbia (United States share) ..	5,000	5,708	5,708	4,539
National defense:				
Army.....	183,442	140,581	373,015	212,187
Navy.....	237,764	186,625	391,424	321,411
Total national defense.....	421,206	327,206	764,439	533,598
Veterans' benefits:				
Veterans' Administration.....	289,799	286,644	575,982	555,573
Adjusted service certificate fund.....	55,918	100,000	1,773,493	50,000
Total veterans' benefits.....	345,717	386,644	2,349,475	605,573
Debt charges:				
Retirements.....	49,995	335,225	403,240	573,558
Interest.....	402,909	357,739	749,397	820,926
Total debt charges.....	452,904	692,964	1,152,637	1,394,484
Refunds:				
Customs.....	7,571	8,180	14,085	20,716
Internal revenue.....	15,010	17,353	30,100	24,532
Processing tax on farm products.....	4,655	9,809	10,082	31,208
Total refunds.....	27,236	35,342	54,267	76,456
Total regular expenditures.....	1,596,112	1,752,593	4,922,714	3,089,657

NATIONAL FINANCE AND THE PUBLIC DEBT

Special Expenditures	Six Months Ended Dec.		Year Ended June 30	
	1936	1935	1936	1935
Agricultural aid:				
AAA.....	30,670	366,114	396,749	711,819
Agricultural contract adjustments.....	96,094	.....	135,453	.....
Commodity Credit Corporation.....	-60,202	154,652	129,715	-60,144
Farm Credit Administration.....	-9,510	-24,513	-21,672	154,370
Federal land banks.....	27,464	26,204	60,487	48,047
Soil conservation.....	35,259	.....	322	.....
Total agricultural aid.....	119,775	522,457	701,054	854,092
Relief:				
FERA.....	8,872	459,993	495,592	1,814,477
Civil Works Administration.....	174	370	676	11,327
Emergency conservation work.....	190,746	319,443	486,281	435,509
Department of Agriculture relief.....	273	2,101	2,882	80,561
Total relief.....	200,065	781,907	985,431	2,341,874
Public works:				
Boulder Canyon.....	6,423	7,536	10,024	23,821
Loans, grants to States, etc.....	107,137	-16,309	172,116	137,707
Loans to railroads.....	-3,237	-50,239	-127,882	66,230
Public highways.....	239,690	140,090	243,896	317,357
River and harbor work.....	138,614	120,049	223,718	203,044
REA.....	2,647	261	1,403	17
WPA.....	1,019,563	215,315	1,263,661	.....
All other.....	201,778	189,979	405,333	327,355
Total public works.....	1,712,615	606,682	2,192,269	1,075,531
Aid to home owners:				
Home loan system.....	18,533	32,074	37,385	75,687
Emergency housing.....	19,008	17,794	24,906	6,480
FHA.....	7,708	6,392	14,505	15,964
Resettlement Administration.....	77,462	22,588	137,908	1,762
Subsistence homesteads.....	.....	414	108	3,662
Total aid to home owners.....	122,711	79,262	214,812	103,555
Miscellaneous:				
Export-Import Banks.....	-464	6,360	19,581	-2,616
FDIC.....	.....	.....	.....	498
NRA.....	10	4,728	5,111	12,497
RFC, direct loans and expenditures.....	-298,988	2,423	-238,722	-135,410
Tennessee Valley Authority.....	21,514	25,248	48,832	36,149
Railroad Retirement Act.....	1,209	.....	270	.....
Social Security Act.....	78,273	.....	28,445	.....
Total miscellaneous.....	-219,960	38,759	-136,483	-88,882
Total special expenditures.....	1,956,720	2,029,067	3,957,083	4,286,170
Total expenditures.....	3,552,829	3,781,661	8,879,798	7,375,825

Excess of receipts.....	-1,394,524	-1,879,651	-4,763,842	-3,575,358
Public debt retirements.....	49,995	335,225	403,240	573,553
Net excess of receipts.....	-1,344,528	-1,544,426	-4,360,601	-3,001,800
Net gain in trust accounts, increment on gold, etc.....	-117,392	-240,614	-274,307	522,056
Net excess of receipts.....	-1,461,920	-1,785,041	-4,634,909	-2,479,744
National bank note retirements.....	57,984	295,997	397,422	91,416
Net excess of receipts.....	-1,403,937	-1,489,043	-4,237,486	-2,388,328
Increase in general fund balance.....	-775,559	367,388	840,165	-740,577
Increase in public debt.....	628,377	1,856,431	5,077,651	1,647,751
Public debt, beginning of year.....	33,778,543	28,700,893	28,700,893	27,053,141
Public debt, end of year.....	34,406,921	30,557,324	33,778,543	28,700,893

VII. PUBLIC FINANCE AND TAXATION

TABLE III. GENERAL BUDGET SUMMARY

General and Special Accounts	Estimated, Fiscal Year 1938	Estimated, Fiscal Year 1937	Actual, Fiscal Year 1936
I. RECEIPTS			
1. Revenues			
Internal revenue.....	\$6,648,432,000	\$5,189,020,000	\$3,512,851,608
Customs.....	463,000,000	446,800,000	386,811,593
Miscellaneous revenues.....	151,550,529	160,500,485	210,824,951
Total revenues.....	\$7,262,982,529	\$5,796,320,485	\$4,110,488,153
2. Realization upon assets.....	\$30,624,668	\$31,830,234	\$5,468,461
Total receipts.....	\$7,293,607,197	\$5,828,150,719	\$4,115,956,615
II. EXPENDITURES			
1. Legislative, Judicial and Executive.....	\$41,344,300	\$41,390,550	\$39,812,725
2. Civil departments and agencies.....	708,392,178	649,538,698	572,580,751
3. General public works program.....	451,108,963	318,590,000	124,428,970
4. National defense.....	980,763,000	887,881,080	764,439,126
5. Veterans' pensions and benefits.....	577,524,000	580,771,465	674,092,867
Adjusted comp. pay.....		563,500,000	1,673,492,531
6. Agric. adjust. prog.....	482,400,000	467,610,000	542,605,751
7. CCC.....	1	368,000,000	486,281,193
8. Social security.....	295,974,000	174,637,500	28,445,292
Old-age reserve acct.....	540,000,000	225,000,000	
9. Debt Charges:			
Interest.....	860,000,000	835,000,000	749,396,801
Retirements.....	401,515,000	404,525,000	403,240,150
10. Refunds.....	52,946,900	48,203,100	44,185,625
11. Recovery and relief ²	316,030,913	2,166,157,100	2,776,796,468
12. Supplemental items.....	450,000,000	750,000,000	
Total expenditures.....	\$6,157,999,254	\$8,480,804,493	\$8,879,798,257
III. SURPLUS	\$1,135,607,943		
(Deficit).....		\$2,652,653,774	\$4,763,841,642
IV. MEANS OF FINANCING DEFICITS			
1. Decrease in working balance.....		\$900,128,774	
2. Borrowings, replacing debt retirements.....		404,525,000	\$403,240,150
Increasing the public debt ³		1,348,000,000	4,360,601,492
Total means of financing.....		\$2,652,653,774	\$4,763,841,642

¹ Funds for continuation of the Civilian Conservation Corps are included under "supplemental items."

² To be increased by any amount appropriated by Congress for recovery and relief for the fiscal year 1938. As indicated in the message it is hoped the amount will not exceed \$1,537,123,000.

³ There will be a further reduction in the working balance of \$100,000,000 for the purpose of retiring national bank notes, thus effecting a reduction in the public debt of this amount.

The government was able not only to spend a total amount far in excess of what it was able to collect in taxes but it also was able to maintain a high level of expenditures in almost all categories right up to the end.

Relief expenditures, especially public works and WPA expenditures, were maintained at a high level despite rapidly improving business conditions. In December, 1935, *The Annalist* Index of Business Activity was 92 per cent of estimated normal: in November, 1936, it was 107.5 per cent. In December, 1935, the United States Bureau of Labor Statistics In-

dex of Factory Employment, adjusted for seasonal variation by *The Annalist*, was 89 per cent of the 1923-25 average: in November, 1936, it was 96.4 per cent. In December, 1935, the factory payrolls index was 78.2: in November, 1936, it was 90.6. Nevertheless Federal expenditures for public works and WPA relief continued practically undiminished up to the end of the year. As is evident from Table II, the deficit for the six months ended Dec. 31, 1936, would have been greater than it actually was had it not been for heavy repayments of loans to the Reconstruc-

NATIONAL FINANCE AND THE PUBLIC DEBT

tion Finance Corporation and other government lending agencies.

The budget for the fiscal year 1938 provided roughly for a decrease of about one-third in recovery and relief expenditures. This was made contingent however on the ability and willingness of private employers to put people back to work. The relief item was placed at \$316,030,913 in the budget, but there was an estimated surplus item of \$1,135,607,943 which was advanced in the budget message as being available for relief purposes, the exact amount to be determined and submitted later to the Congress by the President. The budget message had hardly been delivered before a powerful bloc of Western Senators and Congressmen began to organize for resisting any such proposed reduction in Federal relief patronage.

**TABLE IV. AVERAGE PRICES OF
UNITED STATES TREASURY
BONDS**

(Source: Federal Reserve Board)

	Average Price 14 Issues	Average Yield 11 Issues
1935		
January.....	105.5	2.83
February.....	106.7	2.73
March.....	106.6	2.69
April.....	107.1	2.64
May.....	107.0	2.61
June.....	107.3	2.61
July.....	107.5	2.59
August.....	106.6	2.66
September.....	105.2	2.78
October.....	105.2	2.77
November.....	105.7	2.73
December.....	105.7	2.73
1936		
January.....	106.2	2.68
February.....	106.8	2.62
March.....	107.2	2.54
April.....	107.2	2.51
May.....	107.4	2.50
June.....	107.2	2.50
July.....	107.0	2.50
August.....	107.5	2.43
September.....	107.6	2.41
October.....	107.2	2.42
November.....	108.7	2.29
December.....	108.6	2.27

An even more striking aspect of the 1938 budget, however, was the provisions it made for further increases in the expenses of the "reg-

ular" governmental departments. These increases to a large extent were necessitated by the "regularizing" of the numerous alphabetical agencies created by the New Deal. In the General Budget Summary (Table III) these agencies are included under various headings. The new Rural Electrification Administration, for example, is included under "Civil Departments and Agencies." The Tennessee Valley Authority is included under "General Public Works Program." The increasing amount of control over almost all phases of economic activity which New Deal legislation has been vesting in administrative agencies requires, of course, a marked increase in estimated expenditures of practically all branches of the government. In addition, nearly \$1,000,000,000 is budgeted for for national defense.

In consequence, total expenditures, exclusive of recovery and relief expenditures, are budgeted at about \$6,000,000,000. Although the President showed, with reservations, how this would balance the budget, the saddling of a six billion dollar "regular" expenditure bill on the country will place an unprecedented peacetime tax burden on the nation's productive capacity which may defeat a balanced budget. The President made known plans for reorganizing the administrative agencies, of which he is the head, but for the purpose of greater efficiency rather than economy.

FEDERAL FINANCING

In spite of failure to reduce expenditures, the Treasury Department must be given great credit for the skillful way in which it handled numerous financial problems in 1936. In spite of heavy demands on the Treasury, including the financing of the soldiers' bonus, the situation at the end of 1936 was that there were no long-term bonds maturing until 1941; and in 1937 the only obligations falling due, aside from short-dated Treasury bills, were three issues of Treasury notes aggregating \$1,748,000,000. At the same time there were indications that the Treasury had

VII. PUBLIC FINANCE AND TAXATION

TABLE V. THE GROSS DEBT OF THE UNITED STATES
(End of Each Month, Millions of Dollars)

	Bonds	Notes	Certificates	Bills	Interest Bearing Total	Matured Debt ¹	Other Non-Interest ²	Gross Debt
1935								
January.....	16,250	9,585	163	1,954	27,952	50	474	28,476
February.....	16,247	9,582	161	1,979	27,969	52	505	28,526
March.....	16,238	9,567	160	2,079	28,043	75	700	28,817
April.....	15,394	10,236	158	1,978	27,766	67	835	28,668
May.....	15,157	10,471	157	1,953	27,738	69	832	28,638
June.....	14,936	10,501	156	2,053	27,645	231	825	28,701
July.....	14,576	11,065	254	2,028	27,923	185	1,011	29,120
August.....	14,715	11,036	252	1,952	27,956	184	892	29,033
September.....	14,299	11,929	251	1,952	28,432	146	843	29,421
October.....	13,998	11,929	250	2,204	28,380	284	797	29,462
November.....	14,008	11,957	249	2,404	28,617	253	764	29,634
December.....	14,672	12,274	247	2,404	29,596	224	737	30,557
1936								
January.....	14,688	12,272	254	2,404	29,618	193	706	30,516
February.....	14,713	12,270	258	2,405	29,646	188	686	30,520
March.....	15,981	12,400	258	1,953	30,591	200	668	31,459
April.....	16,005	12,383	259	1,953	30,601	175	650	31,425
May.....	16,030	12,381	258	2,153	30,823	180	634	31,636
June.....	18,395	11,861	146	2,354	32,756	169	620	33,545
July.....	18,303	11,906	117	2,353	32,679	160	605	33,444
August.....	18,277	11,886	107	2,353	32,624	164	593	33,380
September.....	19,259	11,370	106	2,353	33,088	163	582	33,833
October.....	19,258	11,368	105	2,354	33,083	178	571	33,833
November.....	19,265	11,366	104	2,353	33,088	143	563	33,794
December.....	20,576	10,804	116	2,203	33,700	153	554	34,407

¹ On which interest has ceased.

² Consists mainly of U. S. notes, less gold reserve, and retirement of national bank and Federal Reserve Bank notes.

TABLE VI. PERCENTAGE DISTRIBUTION OF THE GROSS PUBLIC DEBT OF THE UNITED STATES AT SIGNIFICANT DATES

Dates	Bonds	Notes	Certificates	Bills	Interest Bearing Total	Matured Debt ¹	Other Non-Interest ²
June 30, 1930.....	74.8	14.8	7.8	1.0	98.4	0.2	1.4
June 30, 1931.....	80.5	3.7	11.5	2.6	98.3	0.3	1.4
June 30, 1932.....	73.1	7.5	14.5	3.2	98.3	0.3	1.4
Feb. 28, 1933.....	68.0	17.1	10.2	3.1	98.3	0.3	1.4
June 30, 1933.....	63.1	21.2	9.8	4.2	98.3	0.3	1.4
Dec. 31, 1933.....	65.4	21.5	7.4	4.2	98.5	0.3	1.3
June 30, 1934.....	61.0	25.6	6.0	5.2	97.9	0.2	1.9
Dec. 31, 1934.....	57.0	33.7	0.6	6.9	98.1	0.2	1.7
June 30, 1935.....	52.0	36.6	0.5	7.2	96.3	0.8	2.9
Dec. 31, 1935.....	48.0	40.2	0.8	7.9	96.9	0.7	2.4
June 30, 1936.....	54.8	35.4	0.4	7.0	97.6	0.5	1.8
Dec. 31, 1936.....	59.8	31.4	0.3	6.4	97.9	0.4	1.6

¹ On which interest has ceased.

² Consists mainly of U. S. notes, less gold reserve, and deposits for retirement of national bank and Federal Reserve Bank notes.

about reached the limit in the matter of cheap-money financing. As shown by Table II, for example, interest charges on the public debt, despite the unprecedented ease in the money market, were higher in the last six months of 1936 than in the corresponding period of 1935. Perhaps this had something to do with the more or less perfunctory effort of the President to forecast a balanced budget in 1938.

STATE FINANCE

STATE FINANCE

BY MERLIN H. HUNTER

PROFESSOR, UNIVERSITY OF ILLINOIS

CHANGES IN TAX LAWS

The year 1936 was not a year in which the legislative bodies of many States were in general session. As a consequence there was comparatively little tax legislation. There were, however, many special sessions and many tax laws were modified. To note the changes which were enacted will give some indication of the trend of tax legislation, while the incorporation of these changes in statistical tables will indicate conditions at the end of 1936.

SALES TAX

Sales taxes were inaugurated as a source of revenue to meet the emergency demands, largely for relief purposes. While it has been admitted that the tax served admirably as a producer of revenue, yet there have been severe criticisms both from the standpoint of justice and from that of administration. There is some indication that the objections are be-

ginning to bear fruit. The tax was repealed in Kentucky while it was not reenacted in Maryland. Such a tax was rejected by a referendum vote in Oregon. Louisiana was the only new State to join the ranks of sales tax states. A tax of 2 per cent is levied upon the sale of tangible personal property at retail, although the sales of a long list of articles are made exempt from the tax. In Oklahoma the rate was increased from 1 per cent to 2 per cent.

In addition to California, Washington, and Oklahoma, which already levied a tax upon the use of property purchased without the State, Ohio and Colorado now levy such a tax. Several States require the evidence of the sales tax having been paid before an automobile can be registered for the first time. The framework of the use of the sales tax in the different States is indicated in the following table:

Arizona.....	Levy upon gross proceeds of sales. Manufacturers, 1%; Motor carriers 1%; Mining, etc., 1%; Electrical energy carriers, telephones, 1%; Sale of tangible personal property at retail, 1½%.
Arkansas.....	Levy upon retail sale of tangible personal property of 2%. Extends to utility services.
California.....	Levy upon privilege of selling tangible personal property at retail; 3% on gross sales. Extends to use of property purchased without state.
Colorado.....	Levy of 2% upon receipts from sale of tangible personal property at retail. Extends to utility services.
Idaho.....	Levy of 2% upon receipts from sale of tangible personal property at retail. Extends to utility services.
Illinois.....	Levy of 3% of gross sales for privilege of selling tangible personal property at retail. Extends to utility services.
Indiana.....	Levy upon gross income. Manufacturers, ¼%; wholesalers, ¼%; utilities, 1%; banks, etc., 1%; professions and all others, 1%.
Iowa.....	Levy of 2% upon gross receipts from retail sales.
Louisiana.....	Levy of 2% on retail sales of tangible personal property. Numerous exemptions such as food, clothing, tobacco, etc.
Maryland.....	Levy of 1% on retail sales of tangible personal property.
Michigan.....	Levy of 3% of gross sales for privilege of engaging in sale of tangible personal property at retail.
Mississippi.....	Levy upon privilege of engaging in business. Natural products, 2%; gas, 2½%; manufactures, ¼ to 1%; wholesalers, ⅛%; retailers, 2%; utilities, 2%; contractors, 1%.
Missouri.....	Levy on privilege of selling tangible personal property. 1% of gross receipts.
New Mexico.....	Occupation tax on retail dealers. Rate ranges from ¼ of 1% to 2%, depending on nature of business.
New York.....	Levy of 1% upon retail sales.
North Carolina....	Levy on privilege of merchandising. Wholesalers, 1/25% of gross sales, minimum, \$25 per year; retailers, \$1 plus 3% of gross sales.
North Dakota.....	Levy of 2% on receipts of retail sales. Extends to public utility services.
Ohio.....	3% upon receipts from retail sales.

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Oklahoma.....	Levy upon sales of tangible personal property and certain specified services and intangibles at 2%.
South Dakota.....	Levy upon gross income. Manufactures, $\frac{1}{4}\%$; salaries, 1% to 2%; wholesalers, $\frac{1}{4}\%$; retailers, 2%.
Utah.....	Levy on sale of tangible personal property. 2% on receipts. Extends to utility services.
Washington.....	Levy upon gross receipts for privilege of engaging in business. Natural products, $\frac{3}{10}\%$ to 1%; manufacturers, $\frac{1}{4}\%$; wholesalers, $\frac{1}{5}\%$; retailers, $\frac{1}{2}\%$; utilities, $\frac{1}{2}\%$ to 3%.
West Virginia.....	Levy upon gross sales for privilege of engaging in business. Natural products, 1% to 6%; manufacturers, $\frac{3}{10}\%$; wholesalers, $\frac{3}{20}\%$; utilities, 1% to 3%; retailers, 2%.
Wyoming.....	Levy upon receipts from retail sales at rate of 2%.

TAXES ON OLEOMARGARINE

There has been no retraction in the levy of taxes upon oleomargarine, although no additional State has levied such a tax within the year. Such taxes are more important as regulatory measures than as producers of revenue and are levied, either at a rate per pound as a license to manufacture and sell, or as a combination of both. The following table indicates the tax levied upon oleomargarine by the different States:

which have been effective in New York and Massachusetts have been continued for another year. In Pennsylvania an amendment was proposed to the constitution which will make the use of an income tax possible. The present status of personal income taxes in the States is shown in the table on the next page.

TAXATION OF CHAIN STORES

Added to the list of States which impose a tax on chain stores are

Alabama.....	10 cents per pound.
Arkansas.....	10 cents per pound.
California.....	10 cents per pound.
Colorado.....	10 cents per pound; \$25 license on manufacturer; \$25 license on wholesaler.
Florida.....	10 cents per pound.
Georgia.....	10 cents per pound.
Idaho.....	5 cents per pound, uncolored; 10 cents per pound colored. \$200 license on wholesaler; \$50 license on retailer.
Iowa.....	5 cents per pound.
Kansas.....	10 cents per pound.
Maine.....	10 cents per pound.
Minnesota.....	10 cents per pound; \$1 license on all producers and dealers.
Nebraska.....	15 cents per pound; \$100 license on manufacturers; \$50 license on wholesalers; \$5 license on retailers.
New Mexico.....	10 cents per pound.
North Carolina.....	10 cents per pound.
North Dakota.....	10 cents per pound; \$10 license on manufacturers; \$5 license on wholesalers; \$2 license on retailers.
Oklahoma.....	10 cents per pound; license ranging from \$10 on manufacturers to \$2 on boarding houses.
Tennessee.....	10 cents per pound; license ranging from \$5 on manufacturers to \$1 on boarding houses.
Utah.....	5 cents per pound, uncolored; 10 cents per pound colored; \$5 license on retailers.
Washington.....	15 cents per pound.
Wisconsin.....	6 cents per pound; \$1,000 license on manufacturer; \$500 license on wholesaler; \$25 license on retailer, hotel, restaurant; \$5 license on bakery, confectionery.
Wyoming.....	10 cents per pound.

PERSONAL INCOME TAXES

Kentucky was the only State added, within the year, to the list of States which tax personal incomes. The rates range from 2% to 5%, the latter applying to all taxable incomes in excess of \$5,000. The exemptions are placed at those in the Federal law. Additional emergency rates

Mississippi and Texas, although there is still some uncertainty as to the constitutionality of the Texas law. Kentucky changed her law from a tax on gross sales to a levy based upon the number of stores. As levied by the States the tax on chain stores is distinctly for regulation rather than revenue. The table (next page)

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PERSONAL INCOME TAXES

State	Rate %	Highest Bracket Begins	Exemption		
			Single	Head of Family	Dependents
Alabama.....	1½-5	\$5,000	\$1,500	\$3,000	\$300
Arizona.....	1-4½	\$10,000	\$10 from tax	\$20 from tax	\$4 from tax
Arkansas.....	1-5	\$25,000	\$1,500	\$2,500	\$400
California.....	1-15	\$250,000	\$1,000	\$2,500	\$400
Delaware.....	1-3	\$10,000	\$1,000	\$2,000	\$200
Georgia.....	1-5	\$20,000	\$1,500	\$3,500	\$400
Idaho.....	1½-8	\$5,000	\$ 700	\$1,500	\$200
Iowa.....	1-5	\$4,000	\$6 from tax	\$12 from tax	\$2 from tax
Kansas.....	1-4	\$7,000	\$ 750	\$1,500	\$200
Kentucky.....	2-5	\$5,000	\$1,000	\$2,500	\$400
Louisiana.....	2-6	\$50,000	\$1,000	\$2,500	\$400
Massachusetts....	1½ to 6+10% of tax	Type of income	\$2,000	\$2,500	\$250
Minnesota.....	1-5	\$10,000	\$1,200	\$2,000	\$250
Mississippi.....	2½-6	\$15,000	\$ 750	\$1,500	\$200
Missouri.....	1-4	\$9,000	\$1,000	\$2,000	\$200
Montana.....	1-4	\$6,000	\$1,000	\$2,000	\$300
New Mexico.....	1-4	\$100,000	\$1,000	\$1,500	\$200
New York.....	2-7	\$9,000	\$1,000	\$2,500	\$400
North Carolina....	3-6	\$6,000	\$1,000	\$2,000	\$200
North Dakota....	1-15	\$15,000	\$5 from tax	\$15 from tax	\$2 from tax
Oklahoma.....	1-9	\$8,000	\$ 850	\$1,700	\$300
Oregon.....	2-7	\$5,000	\$ 800	\$1,500	\$300
Pennsylvania.....	2-8	\$100,000	\$1,000	\$1,500	\$400
South Carolina....	2-5	\$6,000	\$1,000	\$1,800	\$200
South Dakota.....	2-8	\$318,000	\$6 from tax	\$12 from tax	\$2 from tax
Utah.....	1-5	\$5,000	\$ 600	\$1,200	\$300
Vermont.....	2 on net income 4 on interest and dividend		\$1,000	\$2,000	\$250
Virginia.....	1½-3	\$5,000	\$1,000	\$2,000	\$250
Washington.....	3-7	\$4,000	\$1,000	\$2,500	\$400
West Virginia....	1-3	\$5,000	\$ 600	\$1,300	\$200
Wisconsin.....	1-7+ 60% of tax	\$12,000	\$8 from tax	\$17.50 from tax	\$4 from tax

indicates the present status of chain store taxation among the States:

State	Maximum Rate	Applicable to stores above
Alabama.....	\$ 75	20
California.....	\$500	10
Colorado.....	\$300	24
Florida.....	\$400	16
Idaho.....	\$500	19
Indiana.....	\$150	20
Iowa.....	\$155	50
Kentucky.....	1/20 of 1% gross sales	to 1% on sales
Louisiana.....	\$550	500
Maine.....	\$ 50	25
Maryland.....	\$150	20
Michigan.....	\$250	25
Minnesota.....	\$155	50
Mississippi.....	\$300	40
Montana.....	\$ 30	10
North Carolina....	\$225	200
South Carolina....	\$150	30
South Dakota.....	\$ 10	10
Texas.....	\$750	50
West Virginia....	\$250	75
Wisconsin.....	\$250	25

GASOLINE TAXES

Taxes upon gasoline continue to be one of the chief sources of revenue to the States. Gradually these have become more and more stable and few changes are now made from year to year. Continuation of increases in gasoline taxes to produce emergency revenue are found in the legislation of New York, Massachusetts, New Hampshire and Ohio. In New York, however, only one of the temporary measures has been continued so that the maximum rate has really been reduced from 4 cents to 3 cents a gallon. More States are turning a share of the receipts from gasoline taxes to other than highway purposes while many States are attempting to improve the administration of the law. Within the year Kentucky, New Jersey and New York have placed a tax upon the fuel used in Diesel engines. The rates levied

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upon gasoline by the States is shown in the following table:

State	Cents per Gallon 1936
Alabama.....	6
Arizona.....	5
Arkansas.....	6½
California.....	3
Colorado.....	4
Connecticut.....	2
Delaware.....	4
Florida.....	8
Georgia.....	6
Idaho.....	5
Illinois.....	3
Indiana.....	4
Iowa.....	3
Kansas.....	3
Kentucky.....	5
Louisiana.....	5
Maine.....	4
Maryland.....	4
Massachusetts.....	3
Michigan.....	3
Minnesota.....	3
Mississippi.....	6
Missouri.....	2
Montana.....	5
Nebraska.....	5
Nevada.....	4
New Hampshire.....	4
New Jersey.....	3
New Mexico.....	5
New York.....	3
North Carolina.....	6
North Dakota.....	3

Ohio.....	4
Oklahoma.....	4
Oregon.....	5
Pennsylvania.....	3
Rhode Island.....	2
South Carolina.....	6
South Dakota.....	4
Tennessee.....	7
Texas.....	4
Utah.....	4
Vermont.....	4
Virginia.....	5
Washington.....	5
West Virginia.....	4
Wisconsin.....	4
Wyoming.....	4

TAXES ON TOBACCO

The use of tobacco as a source of revenue among the States grew rapidly after 1930. During 1936 year, however, no change was made in the status of tobacco taxes. The States using such taxes, together with the most important of such taxes, are shown in the table below.

DEATH DUTIES

All States except Nevada continue to make a levy upon the transfer of property at death. In most States this continues to be an inheritance tax, that is a tax upon the share of the recipient rather than an estate

TOBACCO TAXES

State	Tax on Cigars	Tax on Cigarettes
Alabama.....	\$1 per 1000 to \$13.50 per 1000 depending on retail price.	1¢ for each 5¢ retail price per package.
Arizona.....	1¢ per three to 1¢ per cigar depending on retail price.	2¢ per 20 or fraction thereof.
Arkansas.....	10% of retail price.	\$2.50 per 1000.
Connecticut.....	10% of retail price.	1 mill per cigarette.
Georgia.....	10% of retail price.	10% of retail price.
Iowa.....		1 mill to 2 mills depending on size.
Kansas.....		2¢ per 20 or fraction thereof.
Louisiana.....	\$2 per 1000 to \$13.50 per 1000 depending on the retail price.	1/5¢ each cigarette.
Mississippi.....	1¢ on each 5¢ retail price or fraction thereof.	1¢ on each 5¢ retail price or fraction thereof.
North Dakota.....		1½ mills each and 2 mills each depending on size.
Ohio.....		1¢ on each 10 or fraction thereof.
Oklahoma.....		1½¢ per package of 10 or less to \$1.50 per 1000.
Pennsylvania.....		1¢ per 10 cigarettes.
South Carolina.....	Less than 3 lbs. per 1000, 1¢ per 10 to \$10 per 1000.	1¢ per each 5¢ retail price or fraction thereof.
South Dakota.....		1½ mills each to 4 mills each depending on weight.
Tennessee.....	10% of retail price.	1/5¢ on each cigarette; 20% when retail price over 1¢.
Texas.....		Less than 3 lbs. per 1000, \$1.50. More than 3 lbs. per 1000, \$3.50.
Utah.....		Not more than 3 lbs. per 1000, 1 mill each. More than 3 lbs. per 1000, 2 mills each.

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tax, or a tax upon the undivided estate. Within the year only Kentucky made any substantial change in such taxation. The following table indicates the present status of such taxes:

INHERITANCE TAXES

State	Rate range direct heirs in per cent	Highest rate applies to amounts over (000 out)	Rate range collateral heirs in per cent	Highest rate applies to amounts over (000 out)
Arizona.....	1-5	\$ 500	2-25	\$ 500
Arkansas.....	1-10	1,000	2-40	1,000
California.....	1-10	500	4-12	500
Colorado.....	2-8	500	3-16	200
Connecticut.....	1-4	200	2-8	200
Delaware.....	1-4	200	2-8	200
Idaho.....	2-15	500	4-30	500
Illinois.....	2-14	500	6-16	500
Indiana.....	1-10	1,500	5-20	1,000
Iowa.....	1-8	300	5-15	300
Kansas.....	1½-5	500	3-15	500
Kentucky.....	2-16	2,000	2-16	60
Louisiana.....	2-3	20	5-7	20
Maine.....	1-3	250	4-6	250
Maryland.....	1-1 1/5	20	7½	flat
Massachusetts.....	1-9	1,000	3-12	flat
Michigan.....	2-8	750	10-15	flat
Minnesota.....	1-6	100	3-20	100
Missouri.....	1-6	400	3-30	400
Montana.....	2-8	100	4-32	100
Nebraska.....	1	50	4-12	50
New Hampshire.....	none	...	7½	flat
New Jersey.....	1-16	3,700	5-16	3,700
New Mexico.....	1	5	flat	flat
North Carolina.....	1-12	3,000	4-25	3,000
Ohio.....	1-4	200	5-8	200
Pennsylvania.....	2	flat	10	flat
Rhode Island.....	1½-3	1,000	5-8	1,000
South Carolina.....	1-6	300	2-14	300
South Dakota.....	2-8	100	3-20	100
Tennessee.....	1-7	500	5-15	500
Texas.....	1-6	1,000	3-20	1,000
Vermont.....	1-5	250	5	flat
Washington.....	1-10	200	2-20	200
West Virginia.....	3-13	1,000	4-30	1,000
Wisconsin.....	2-10	500	4-40	500
Wyoming.....	2	flat	4-6	flat

ESTATE TAXES

State	Rate %	Exemption	Highest Rate ap- plies to amounts over (000 out)
Alabama.....	4/5-16	\$100,000	\$10,000
Colorado.....	4/5-16	100,000	10,000
Florida.....	4/5-16	100,000	10,000
Georgia.....	4/5-16	100,000	10,000
Mississippi.....	4/5-16	50,000	10,000
New York.....	1-20	20,000	10,000
North Dakota.....	2-23	20,000	1,500
Oklahoma.....	1-10	15,000	10,000
Oregon.....	1-15	10,000	1,500
Rhode Island.....	1	10,000	flat
Utah.....	3-10	10,000	125

CORPORATION AND BUSINESS TAXES

Kentucky is the only State in which a change has been made in the method of taxing corporations, further emphasizing the trend towards new income as the method for corporation taxation. New York has continued her tax upon the net income of unincorporated business. The present status of the tax upon the net income tax of corporations is shown in the following table:

State	Rate in %
Alabama.....	3
Arizona.....	1-5
Arkansas.....	2

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State	Rate in %
California.....	2
Connecticut.....	2
Georgia.....	4
Idaho.....	1-4
Iowa.....	2
Kansas.....	2
Kentucky.....	2
Louisiana.....	4
Massachusetts.....	2½
Minnesota.....	1-5
Mississippi.....	2½-6
Missouri.....	2
Montana.....	2
New Mexico.....	2
New York.....	4½
North Carolina.....	6
North Dakota.....	3
Ohio.....	6
Oklahoma.....	6
Oregon.....	8
Pennsylvania.....	6
South Carolina.....	4½
South Dakota.....	1-8
Tennessee.....	3
Utah.....	3
Vermont.....	2
Virginia.....	3
Washington.....	4
Wisconsin.....	2-6 + surtax

BANK TAXATION

A great deal of discussion continues as to the proper method for the taxation of banks. Within the year, however, no significant legislation was adopted. Previously, however, there was a trend from capital stock to net income as a base. The extent to which this has gone is shown in the following table:

State	Rate upon net income
Alabama.....	5
California.....	2-6
Oklahoma.....	1-6
Oregon.....	8
Idaho.....	1-6
Massachusetts.....	6
New York.....	4½
Utah.....	3
Wisconsin.....	2-6 + surtax

OTHER STATE TAXES

Many other sources enter into the revenues of the States, some of which are so complex and varied that it is impossible to show them in condensed tabular form. Taxes upon malt and distilled liquors are of this nature. These vary extensively not only in size but in method of levy. There is the combined motive of regulation with that of revenue in such levies.

Taxes upon the different classes of public utilities also vary greatly.

While problems are encountered in taxing the different classes, those encountered in taxing commercial motor carriers are perhaps the most troublesome. The competition of buses and trucks with other carriers and their use of the public highway complicates a satisfactory solution to the problem of their taxation. None of the diverse methods used in the different States seems to meet with the approval of all groups concerned.

No additional reliance is being placed upon property for state purposes. In fact exemptions from property taxes is on the increase. Homestead allowances are becoming more general, while more States are extending exemption to machinery, tools, and other types of personal property. Legislators have given attention to a better collection of taxes as well as to a postponement of sale of property for delinquent taxes.

INDEBTEDNESS OF STATES

Statistics of indebtedness of the States are not available year by year. The last general figures are from the Census reports and are for the year 1932. The table (next page) shows the status of indebtedness as of that year together with the change from 1912.

OFFICIAL ACTIVITIES

State officials concerned with tax administration must be active. The increased needs for revenue with the imposition of new forms of taxation have increased their responsibilities. That all the problems have not been solved is readily seen from the reports of the different state tax commissions and other taxing officials. Recognition is again being made of the value of having a special commission study the problems and make recommendations. Within the year provision has been made for such a commission in Indiana, Massachusetts and New York.

Unofficial groups remain active. State taxpayers associations are numerous. The *Proceedings* and *Bulletin* of the National Tax Association show the extent of the activities and

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interest of this organization. *The Tax Magazine* and *The Tax Systems of the World* are also valuable contributions to the literature in which problems of the tax systems of the States are involved.

INDEBTEDNESS OF STATES

State	1912		1932	
	Total (000 out)	Per Capita	Total (000 out)	Per Capita
Alabama.....	\$13,132	\$ 5.95	\$ 82,342	\$30.90
Arizona.....	3,065	13.28	3,677	8.34
Arkansas.....	1,236	.76	164,423	88.16
California.....	10,223	3.83	145,723	24.67
Colorado.....	3,134	3.70	6,747	6.45
Connecticut.....	7,111	6.12	108	.07
Delaware.....	763	3.70	2,072	8.63
Florida.....	619	.77	391	.26
Georgia.....	6,934	2.57	12,488	4.29
Idaho.....	2,143	5.92	6,961	15.61
Illinois.....	2,273	.39	221,404	28.58
Indiana.....	1,350	.49	4,730	1.45
Iowa.....	357	.16	16,495	6.66
Kansas.....	243	.14	21,810	11.53
Kentucky.....	4,441	1.90	16,224	6.16
Louisiana.....	13,546	7.89	83,743	39.41
Maine.....	1,255	1.67	27,219	34.02
Maryland.....	7,334	5.56	31,198	18.99
Massachusetts.....	79,551	22.78	62,856	14.69
Michigan.....	7,089	2.41	60,582	12.21
Minnesota.....	1,345	.63	40,156	15.55
Mississippi.....	4,461	2.41	36,319	17.94
Missouri.....	4,671	1.40	103,302	28.33
Montana.....	1,513	3.73	9,316	17.33
Nebraska.....	374	.31	929	.67
Nevada.....	608	6.70	1,370	14.89
New Hampshire.....	1,956	4.50	6,505	13.96
New Jersey.....	1,642	.24	62,198	15.05
New Mexico.....	1,218	3.41	11,407	26.53
New York.....	86,205	9.05	463,068	36.14
North Carolina.....	8,059	3.54	177,210	54.83
North Dakota.....	820	1.29	5,005	7.32
Ohio.....	5,142	1.05	7,696	1.15
Oklahoma.....	6,931	3.74	11,438	4.74
Oregon.....	31	.04	33,388	34.60
Pennsylvania.....	..	..	75,858	7.81
Rhode Island.....	5,127	9.02	16,807	24.15
South Carolina.....	6,190	3.98	77,984	44.74
South Dakota.....	370	.58	15,510	22.19
Tennessee.....	11,812	5.32	94,032	35.55
Texas.....	4,756	1.14	10,317	1.75
Utah.....	1,430	3.62	5,694	11.08
Vermont.....	570	1.58	9,545	26.51
Virginia.....	22,043	10.46	25,983	10.68
Washington.....	1,556	1.21	8,257	5.22
West Virginia.....	..	..	86,394	49.20
Wisconsin.....	2,251	.93	1,184	.40
Wyoming.....	122	.77	5,568	24.42

VII. PUBLIC FINANCE AND TAXATION

MUNICIPAL FINANCE

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CONTINUED IMPROVEMENT IN CITY FINANCES

An examination of the financial condition of municipalities for the year 1936 disclosed definite signs of a continuation of the improvement which began in 1934. This further improvement was indicated especially by a decline in tax delinquencies and

a decrease in the volume of defaults. The decline in tax delinquencies resulted from the general improvement in business conditions and from the activities of various Federal agencies. The reduction in the number of defaults was largely attributable to the improvement with respect to delinquencies.

MUNICIPAL EXPENDITURES

(000 omitted)

Operation and Maintenance of General Departments: 146 Cities

Year	Total	General Government	Protection to Person and Property	Health and Sanitation	Highways
1934 ¹	\$1,744,975	\$135,766	\$298,758	\$134,296	\$111,306
1933 ¹	1,727,043	142,296	298,852	138,921	110,652
1932 ¹	1,806,517	149,909	328,797	160,010	127,670
1931.....	2,229,492	183,171	421,055	202,502	181,314
1930.....	1,820,905	163,614	361,956	180,553	149,268
1929.....	1,730,288	140,521	339,816	174,858	147,375
1928.....	1,656,989	147,250	328,102	167,979	138,936
1927.....	1,562,615	136,848	315,362	160,259	137,892
1924.....	1,287,484	111,856	259,275	130,388	109,807
1922.....	1,155,691	105,174	234,199	115,488	98,763
1919.....	697,319	72,585	146,763	75,847	65,003
1917.....	591,399	68,912	126,854	60,378	60,712
1915.....	546,568	62,793	120,696	55,758	60,615
1911.....	452,899	53,766	106,120	45,691	52,214
1907.....	367,367	42,703	87,885	36,899	42,718
1903.....	278,173	30,842	71,020	25,807	34,208

¹ Statistics for 1932 to 1934 are for 94 cities having a population over 100,000: All other data are for cities over 30,000.

Year	Charities, Hospitals, and Corrections	Schools	Libraries	Recreation	Miscellaneous
1934.....	\$345,214	\$526,864	\$20,271	\$48,306	\$124,194
1933.....	292,212	542,034	19,744	60,097	122,235
1932.....	234,419	629,353	— ¹	63,117	113,242
1931.....	201,896	839,577	— ¹	78,952	121,027
1930.....	138,051	637,196	24,515	66,060	99,692
1929.....	116,147	622,587	23,029	61,863	94,091
1928.....	111,052	598,065	21,847	56,038	87,715
1927.....	99,806	560,668	20,167	53,839	77,731
1924.....	79,239	475,725	15,782	41,819	63,590
1922.....	76,627	422,843	14,326	38,703	49,603
1919.....	53,262	216,701	9,079	24,204	33,870
1917.....	43,911	180,259	7,570	20,636	22,164
1915.....	38,285	162,332	7,134	20,416	18,535
1911.....	30,647	127,604	5,939	17,114	13,801
1907.....	24,408	102,395	4,989	11,794	13,572
1903.....	18,280	80,853	4,067	7,457	5,634

¹ Expenditures for libraries and schools combined in 1931 and 1932.

MUNICIPAL FINANCE

EXPENDITURES

The most recent year for which the comprehensive statistics of the Bureau of the Census are available is 1934. Unfortunately, the figures for 1932 to 1934 are limited to cities having a population of over 100,000. By Executive Order of June 10, 1933, the annual collection and compilation of financial statistics were limited to cities over 100,000 population until after the close of fiscal year 1935.

While some of the absolute expend-

itures just noted may appear large, yet little significance can be attached to them. The size of an expenditure becomes intelligible in terms of service when one discovers the number among which it is divided. The per capita expenditures of cities, both as a whole and for particular items, have varied greatly from time to time, but the general tendency has been to increase. The following table shows the change in per capita expenditures for selected years:

PER CAPITA EXPENDITURES

Year	Total	General government	Protection to person and property	Health and Sanitation	Highways	Charities, hospitals, and corrections	Education		Recreation ²	Miscellaneous
							Schools ¹	Libraries ¹		
1934.....	\$46.43	\$3.61	\$7.95	\$3.57	\$2.97	\$9.18	\$14.56	\$....	\$1.29	\$3.30
1933.....	46.08	3.80	7.98	3.71	2.95	7.80	14.99	....	1.60	3.26
1932.....	47.87	3.97	8.71	4.24	3.38	6.21	16.68	....	1.67	3.00
1931.....	46.18	3.79	8.72	4.19	3.75	4.18	17.39	....	1.63	2.51
1930.....	44.29	3.82	8.68	4.28	3.64	3.12	16.28	.61	1.59	2.28
1929.....	43.45	3.66	8.46	4.33	3.70	2.78	16.14	.59	1.55	2.25
1928.....	42.43	3.66	8.33	4.24	3.56	2.70	15.80	.57	1.44	2.14
1927.....	40.77	3.46	8.13	4.13	3.60	2.49	15.08	.53	1.40	1.94
1924.....	35.61	3.01	7.10	3.55	3.07	2.08	13.52	.44	1.15	1.67
1922.....	33.15	2.94	6.66	3.25	2.87	2.08	12.50	.41	1.09	1.34
1919.....	21.63	2.22	4.53	2.34	2.04	1.59	6.88	.28	.74	1.01
1917.....	18.96	2.18	4.04	1.93	1.96	1.36	5.89	.25	.66	.69
1915.....	18.45	2.10	4.06	1.86	2.06	1.26	5.58	.24	.68	.61
1911.....	17.62	2.08	4.12	1.77	2.04	1.17	5.04	.23	.65	.53
1907.....	15.95	1.86	3.80	1.59	1.91	1.05	4.42	.21	.51	.59
1903.....	13.19	1.46	3.35	1.21	1.64	.86	3.86	.10	.35	.27

¹ Payments for pensions are included in column "Miscellaneous" for the years 1911 to 1928 inclusive; for the years 1903 to 1909 inclusive, they are included with expenses of police, fire and school departments.

² Payments for expenses of art galleries and museums are included in column "Recreation" for the years 1911 to 1928 inclusive; for the years 1903 to 1909 inclusive, they are included with the expenses of libraries; expenditures for libraries and schools are combined for the years 1931 to 1934.

There is a wide difference in the importance attached to the different functions performed by municipalities. While over a period of years there has been some change in the relative importance of some of the items, it is interesting to note that expenditures for education have always been far larger than any other, and that the relative importance of this item up to 1932 tended to increase with the years. Protection and highways have commanded a smaller percentage of the expenditures than formerly. The most significant development in 1934, it will be noted,

was the increase in expenditures for charities, hospitals, and corrections. The table (next page, above) shows the relative importance of the different services over a period of some 30 years.

The expenditures just described are designated as "expenses" by the Census Bureau. In addition to these, there are a number of other expenditures, the most important of which are for interest and outlays. The interest payments are for the funded and floating debt, special assessment loans, and other minor types of borrowing. In 1934 the total interest

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PERCENTAGE OF EXPENDITURES FOR DIFFERENT MUNICIPAL FUNCTIONS

Year	General government	Protection to person and property	Health and Sanitation	Highways	Charities, hospitals, corrections	Education		Recreation	Miscellaneous
						Schools	Libraries ¹		
1934.....	7.8	17.1	7.7	6.4	19.8	31.4	...	2.8	7.1
1933.....	8.2	17.3	8.1	6.4	16.9	32.5	...	3.5	7.1
1932.....	8.3	18.2	8.9	7.1	13.0	34.8	...	3.5	6.3
1931.....	8.2	18.9	9.1	8.1	9.1	37.6	...	3.5	5.4
1930.....	8.6	19.6	9.7	8.2	7.0	36.8	1.4	3.6	5.1
1929.....	8.4	19.5	10.0	8.5	6.4	37.2	1.4	3.6	5.2
1928.....	8.6	19.6	10.0	8.4	6.4	37.2	1.4	3.4	5.0
1927.....	8.5	20.0	10.1	8.8	6.6	37.0	1.3	3.4	4.8
1924.....	8.5	19.9	10.0	8.6	5.9	38.0	1.2	3.2	4.7
1922.....	8.9	20.1	9.8	8.7	6.3	37.7	1.2	3.3	4.0
1919.....	10.2	21.0	10.8	9.4	7.3	31.8	1.3	3.4	4.7
1917.....	11.5	21.4	10.1	10.4	7.2	31.1	1.3	3.5	3.5
1915.....	11.4	22.0	10.1	11.2	6.8	30.2	1.3	3.7	3.3
1911.....	11.8	23.4	10.1	11.6	6.6	28.6	1.3	3.7	3.0
1907.....	11.7	23.8	9.9	12.0	6.6	27.7	1.3	3.2	3.6
1903.....	11.1	25.3	9.2	12.4	6.5	29.3	1.5	2.7	2.1

¹ Percentages for schools and libraries combined for the years 1931 to 1934.

payment was \$352,886,000. Expenditures for outlays comprise the amounts paid for the acquisition and construction of more or less permanent improvements, including payments for additions made to those previously acquired or constructed. Such payments in 1934 amounted to \$304,404,000 in comparison with only \$266,996,000 for the preceding year.

TAXES AND REVENUE

The revenue of cities arises from

a number of sources. In most cities more than 90 per cent of the funds which go into the general revenue fund come from the general property tax. This is a tax levied against real and personal property. In addition to the general property tax, the Census Bureau designates certain taxes as special property taxes. Such include taxes upon the capital stock of corporations, upon savings banks and other financial institutions, and upon insurance companies. Included in this, also, would be taxes levied

PERCENTAGE OF RECEIPTS FROM DIFFERENT SOURCES OF REVENUE

Year	The general property tax	Other taxes	Special assessments	Subventions and grants, donations, and pension assessments	Earnings of public service enterprises	Other revenues
1934.....	62.6	5.3	2.2	13.5	9.8	6.6
1933.....	64.3	4.3	2.4	12.3	9.5	7.2
1932.....	66.2	4.7	3.9	8.5	9.3	7.4
1931.....	66.2	4.7	3.9	8.5	9.3	7.4
1930.....	65.9	6.2	6.7	5.8	9.4	5.9
1929.....	64.7	6.4	7.2	5.8	9.8	6.1
1928.....	66.1	5.8	7.6	5.4	9.2	5.9
1927.....	66.1	5.7	7.7	4.9	9.6	6.2
1924.....	66.1	5.7	5.9	5.3	10.3	6.8
1922.....	66.9	5.2	4.8	5.9	9.0	8.2
1919.....	66.0	7.6	5.6	4.1	10.2	6.4
1917.....	64.3	7.4	7.8	4.0	9.9	6.6
1915.....	62.4	7.8	8.5	4.2	10.0	6.9
1911.....	61.9	8.7	8.4	4.6	10.6	5.8
1907.....	59.4	10.6	8.2	4.8	11.2	5.8
1903.....	61.4	9.8	7.6	4.3	11.5	5.5

MUNICIPAL FINANCE

upon mortgages at time of recording, taxes upon incomes and estates, upon investments, and a wide range of specific taxes.

In many cities, some form of poll tax continues to be used, although such taxes are much less important than formerly. No generalization can be made as to method of levy since this varies greatly from city to city. In addition, business and non-business license taxes make up a large group of levies upon different types of business activities, some of which, of course, are levied primarily for regulative purposes. The latter include such levies as those upon dogs, dance halls, etc. Receipts from special assessments constitute an important item, but they do not enter the general revenue fund. In some places at a particular time subventions and grants are an important source of income, while in some cities, also, the earnings from public enterprises are not unimportant. The relative importance of the major sources of revenue over a period of years is shown in the table on the preceding page.

That the tax burden imposed by cities has been increasing much more rapidly than population is readily seen when one notes the change in the per capita amounts collected from

different sources over a period of years.

MUNICIPAL INDEBTEDNESS

Receipts from sources of revenue may either just pay expenses, more than pay expenses, or fail to pay them. In many cases, the administration of the finances has planned for a surplus but because of a shrinkage in revenues has had to resort to borrowing.

In the calculations of the Census Bureau, municipal indebtedness is divided into two distinct groups—funded debt and floating debt. The former includes all obligations represented by formal investments which have a number of years to run and for the redemption of which no assets other than a sinking fund have been specifically designated. The latter, on the other hand, includes such indebtedness as is evidenced by warrants and accounts payable, by short term bonds, etc. The gross indebtedness is, of course, the total amount, while to subtract from this the value of the assets in a sinking fund will indicate the net indebtedness. The table on the next page shows the total indebtedness, the sinking fund assets, and the net indebtedness for certain years. The latest statistics that are available for 1931, 1932, and 1933 give only net indebtedness.

PER CAPITA RECEIPTS FROM DIFFERENT SOURCES

Year	Total	The general property tax	Other taxes	Special assess- ments	Subventions and grants, donations, and pension assessments	Earnings of public service enterprises	Other revenues]
1934.....	\$72.13	\$45.17	\$3.77	\$1.61	\$9.71	\$7.09	\$4.78
1933.....	66.88	43.02	2.88	1.59	8.25	6.36	4.78
1932.....	68.82	45.57	3.24	2.70	5.84	6.42	5.03
1931.....	70.84	46.90	3.46	3.86	4.79	6.89	4.94
1930.....	73.32	48.34	4.57	4.91	4.25	6.92	4.33
1929.....	69.63	45.07	4.43	5.01	4.02	6.82	4.28
1928.....	72.11	47.67	4.18	5.52	3.87	6.65	4.23
1927.....	69.77	46.09	3.95	5.36	3.40	6.67	4.29
1924.....	58.41	38.59	3.33	3.43	3.12	6.00	3.96
1922.....	53.57	35.85	2.80	2.58	3.13	4.83	4.38
1919.....	35.26	23.29	2.68	1.98	1.43	3.61	2.27
1917.....	31.97	20.57	2.37	2.50	1.28	3.13	2.12
1915.....	30.00	18.73	2.36	2.54	1.26	3.03	2.08
1911.....	28.07	17.37	2.44	2.35	1.30	2.98	1.63
1907.....	24.67	14.64	2.63	2.02	1.18	2.77	1.43
1903.....	21.14	12.98	2.06	1.60	.91	2.42	1.16

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MUNICIPAL INDEBTEDNESS

(000 omitted)

Year	Funded or fixed, and floating debt	Sinking Fund Assets		Net Debt	
		Amount	Per Capita	Amount	Per Capita
1934.....	\$.....*	\$.....*	\$.....*	\$6,380,478	\$169.76
1933.....	.....*	.....*	.....*	6,360,586	169.70
1932.....	.....*	.....*	.....*	6,289,078	166.66
1931.....	.....*	.....*	.....*	6,328,778	159.70
1930.....	7,808,379	1,840,816	47.20	5,967,563	153.02
1929.....	7,233,151	1,703,316	44.45	5,529,835	144.33
1928.....	6,860,660	1,607,178	42.72	5,253,482	139.27
1927.....	6,456,781	1,513,273	41.10	4,943,507	134.27
1924.....	5,057,023	1,215,043	34.82	3,481,980	110.09
1922.....	4,332,114	1,051,468	31.27	3,280,645	97.57
1919.....	3,352,688	811,516	25.93	2,541,172	81.18
1917.....	3,150,424	704,573	23.26	2,445,851	80.75
1915.....	2,866,008	620,102	21.50	2,245,906	77.86
1911.....	2,305,059	496,230	11.52	1,808,828	67.52
1907.....	1,657,320	362,441	15.68	1,808,878	56.04
1903.....	1,223,101	290,096	13.90	933,004	44.71

* Not available for years 1931 to 1934.

DEVELOPMENTS IN THE BOND MARKET

An improvement in the demand for municipal securities since 1933 is indicated by the following table which shows the aggregate disposals of long-term obligations by States and municipalities for the first ten months of each year for a series of years:

MUNICIPAL BOND ISSUES

(000 omitted)

Year	Total first ten months	Year	Total first ten months
1936	\$ 873,264	1924	\$1,280,504
1935	968,737	1923	850,952
1934	728,531	1922	990,188
1933	392,580	1921	868,392
1932	701,938	1920	570,109
1931	1,156,129	1919	581,871
1930	1,211,857	1918	245,789
1929	1,055,135	1917	402,828
1928	1,094,074	1916	402,548
1927	1,297,029	1915	434,829
1926	1,149,105	1914	423,171
1925	1,174,724	1913	327,902

Source: *Commercial and Financial Chronicle*

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

The table showing municipal bond issues does not include the extension grants made to municipalities for public-works projects by the Federal Emergency Administration of Public

Works. This agency was created by the National Industrial Recovery Act which became effective June 16, 1933. Under Title II of this act, authority was granted to the Administrator to furnish grants, not subject to repayment, for 30 per cent of the total expenditures incurred for the payment of labor and material costs on approved public-works projects. Moreover, the agency was authorized to accept 4 per cent general obligation or revenue bonds of the municipalities as security for the loan portion of the allotment. In 1934 Congress authorized the Reconstruction Finance Corporation to purchase marketable securities from the Public Works Administration and provided that moneys realized by the Public Works Administration from such sales might be used for making additional loans, but not grants, in aid of non-Federal public works projects under Title II of the N. I. R. A.

In addition to the program of public works administered under Title II of the National Industrial Recovery Act, the Public Works Administration has been carrying on a separate program pursuant to the Emergency Relief Appropriation Act of 1935. Under the latter act the amount of the grant has been fixed by administrative determination at

MUNICIPAL FINANCE

45 per cent of the cost of the project, with a corresponding reduction in the amount to be furnished by the applicant. Provision was made under this act for the sale of bonds acquired as collateral for municipal loans either on the open market or to the Reconstruction Finance Corporation, the proceeds to be used only for the making of loans. In practice the sales have been confined to the Reconstruction Finance Corporation which, in turn, sells the securities in the open market. A substantial profit has been derived from this financing, but in recent months municipalities have found it advantageous to dispose of an increasingly large number of issues locally.

According to a statement issued by Administrator Harold L. Ickes on Oct. 19, 1936, the Public Works Administration since its creation has pledged itself to buy approximately \$962,000,000 worth of bonds. Because of recent large withdrawals, this commitment has been reduced to \$788,000,000, of which \$603,000,000 has been delivered. The major portion of the amount acquired by the Public Works Administration has been placed with the Reconstruction Finance Corporation and re-sold to the general public.

TAX DELINQUENCY

Tax delinquency is a natural phenomenon of a business depression. And a rising trend of tax delinquency inevitably cripples municipal functions and weakens municipal credit. Dun and Bradstreet has made a study of the trend of median year-end tax delinquency in 150 cities of over 50,000 population for the six-year period from 1930 to 1935. The following percentages show the median delinquency on the current tax levy at the end of each fiscal year:

1930	1931	1932	1933	1934	1935
10.15%	14.60%	19.95%	26.35%	23.05%	18.0%

These figures show a substantial gain in collections since 1933, but delinquency is still higher than it was in 1930. Only fragmentary data are available for 1936, but the trend is unmistakingly downward.

DEBT DEFAULTS

Heavy tax delinquency in recent years naturally resulted in a large number of defaults. The *Bond Buyer* estimated, with certain reservations, that 779 cities and towns were in default on their bonds on Aug. 1, 1936. This represented a substantial reduction from the previous year when 851 incorporated places were in default. The following States, according to the *Bond Buyer*, had the largest number of defaults:

Florida.....	208	Oklahoma.....	48
Arkansas.....	162	Ohio.....	40
North Carolina..	122	Michigan.....	35
New Jersey.....	89	Tennessee.....	30
Texas.....	79	Oregon.....	17

It is significant to note that two States, Florida and North Carolina, which rank high in the number of defaults, also had the largest increases in local indebtedness between 1912 and 1932, the percentages being 2,779.01 and 1,300.8 respectively. The indebtedness of Maine during the same period increased only 73.2 per cent, while that of Massachusetts increased only 99.2 per cent. Neither of these States had any bonds in default in 1936.

While no data are available regarding the volume of municipal bonds in default, it can reasonably be stated that the volume of such defaults has declined materially during the past year.

DEBT ADJUSTMENT LEGISLATION

For the purpose of aiding municipalities which are in default on their obligations, various States have recently passed state receivership and debt adjustment acts. Boards or commissions have been established to supervise local indebtedness in general, to supervise the refunding of municipal bonds, and to act as receivers in event of failure to meet debt service.

The Municipal Bankruptcy Act, a Federal measure, was enacted May 24, 1934. This act was designed to enable any taxing district, with the consent of its creditors and the approval of a Federal District Court, to adjust its debt structure. It provided that any taxing district might

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file a petition with a Federal District Court stating that it was unable to meet the terms of its present debt contracts and proposing a plan for readjustment. By a five-to-four decision, the act was declared unconstitutional by the Supreme Court of the United States in *Sumners v. Wilcox* in May, 1936. A petition for a re-

hearing of the case was subsequently rejected by the Court. According to the *Bond Buyer*, only 27 cities, one county, one school district, 41 irrigation districts, and one road district filed petitions under the Municipal Bankruptcy Act up to May, 1936, when the Act was declared unconstitutional.

INCOME TAXES

By MABEL L. WALKER

EXECUTIVE SECRETARY, TAX POLICY LEAGUE

FEDERAL INCOME TAX

Normal Tax on Corporations.—

No changes were made in the individual normal and surtax rates by the Revenue Act of 1936, but an important change was made in the method of taxing the income of corporations. The graduated rate, starting at 12½ per cent on the first \$2,000 of taxable income and reaching a maximum of 15 per cent on taxable income in excess of \$40,000, adopted in 1935, was changed to provide for a scale of graduation ranging from 8 per cent upon normal tax net incomes not in excess of \$2,000 up to 15 per cent on incomes in excess of \$40,000.

Surtax on Undistributed Profits.

—The most important feature of the 1936 legislation was the introduction

of a surtax on undistributed profits, graduated from 7 per cent of the undistributed net income, when income retained is not in excess of 10 per cent of adjusted net income, to 27 per cent of the amount of income retained in excess of 60 per cent of total income.

Surtax on Personal Holding Companies.—

Personal holding companies will be taxed at rates graduated from 8 per cent of the first \$2,000 of undistributed net income to 48 per cent on undistributed income in excess of \$1,000,000.

Revenue from Federal Tax.—

Revenues from both personal and corporate income taxes showed a marked increase. The proportion of all Federal taxes received from these

FEDERAL PERSONAL INCOME TAX RATES ON DIFFERENT INCOMES

Net Income	Ratio of Total Tax to Net Income (per cent)	
	Single (Exemption \$1,000)	Married with no dependents (Exemption \$2,500)
\$ 1,000.....	0	0
2,000.....	1.6	0
3,000.....	2.3	.3
4,000.....	2.6	1.1
5,000.....	2.8	1.6
10,000.....	5.6	4.2
20,000.....	9.2	7.9
50,000.....	18.7	17.7
100,000.....	33.3	32.5
200,000.....	48.1	47.7
500,000.....	61.0	60.8
1,000,000.....	68.0	67.9
2,000,000.....	72.5	72.4
5,000,000.....	75.8	75.8
10,000,000.....	77.4	77.4

INCOME TAXES

sources increased from 30 per cent in 1935 to 40 per cent in 1936. Comparisons for the past three years are as follows:

(in thousands of dollars)

Fiscal Year	Corporation Tax	Personal Tax	Total Tax	Per Cent of all Federal Taxes from Income Tax
1935/36.....	\$738,522	\$674,416	\$1,412,938	40.0
1934/35.....	572,118	527,113	1,099,231	30.2
1933/34.....	397,516	419,509	817,025	27.7

STATE INCOME TAX

Changes.—Kentucky was the only additional State to adopt an income tax in 1936. Corporations are taxed at a flat rate of 4 per cent. Personal

rates are graduated from 2 per cent to 5 per cent. Both the personal and corporate taxes in Washington were held invalid by the Washington Supreme Court. The Iowa income tax

DIGEST OF STATE PERSONAL INCOME TAX PROVISIONS

State	Year first effective	Personal Exemption			Rate of Tax (per cent)	Amount of taxable income in excess of which maximum rate applies
		Single	Head of family	Dependents		
Alabama.....	1933	\$1,500	\$3,000	\$300	1½- 5	\$ 5,000
Arizona.....	1933	10 (a)	20 (a)	4 (a)	1 - 4½	10,000
Arkansas.....	1929	1,500	2,500	400	1 - 5	25,000
California.....	1935	1,000	2,500	400	1 -15	250,000
Delaware.....	1917	1,000	2,000	200	1 - 3	10,000
Georgia.....	1929	1,500	3,500	400	1 - 5	20,000
Idaho.....	1931	700	1,500	200	1½- 8	5,000
Iowa.....	1934	6 (a)	12 (a)	2 (a)	1 - 5	4,000
Kansas.....	1933	750	1,500	200	1 - 4	7,000
Kentucky.....	1936	1,000	2,500	400	2 - 5	5,000
Louisiana.....	1934	1,000	2,500	400	2 - 6	50,000
Massachusetts.....	1916	2,000 (b)	2,500 (b)	250 (b)	1½- 6 (c)	—
Minnesota.....	1933	1,200	2,000	250	1 - 5	10,000
Mississippi.....	1912	750	1,500	200	2½- 6	15,000
Missouri.....	1917	1,000	2,000	200	1 - 4	9,000
Montana.....	1933	1,000	2,000	300	1 -29	100,000
New Hampshire.....	1923	200	200	—	(d)	—
New Mexico.....	1933	1,500	2,500	200	1 - 4	100,000
New York.....	1919	1,000	2,500	400	2 - 7 (e)	9,000
North Carolina.....	1921	1,000	2,000	200	3 - 6	6,000
North Dakota.....	1919	5 (a)	15 (a)	2 (a)	1 -15	15,000
Ohio.....	1931	—	—	—	5 (f)	—
Oklahoma.....	1908	850	1,700	300	1 - 9	8,000
Oregon.....	1930	800	1,500	300	2 - 7 (g)	5,000
South Carolina.....	1922	1,000	1,800	200	2 - 5 (h)	6,000
South Dakota.....	1935	6 (a)	12 (a)	2 (a)	1 - 8	318,000
Tennessee.....	1929	—	—	—	5 (i)	—
Utah.....	1931	600	1,200	300	1 - 5	4,000
Vermont.....	1931	1,000	2,000	250	2 - 4 (j)	—
Virginia.....	1843	1,000	2,000	200	1½- 3	5,000
West Virginia.....	1935	600	1,300	200	1 - 3	6,000
Wisconsin.....	1911	8 (a)	17.50 (a)	—	1 - 7(k)	12,000

(a) Deduction from tax. (b) Exemptions apply to earned income. There is a flat exemption of \$300 for unearned income. (c) Earned income and annuities 1½ per cent; capital gains, 3 per cent; interest and dividends 6 per cent. Temporary additional tax of 10 per cent of regular tax, effective August 13, 1935. (d) Average rate on real estate; applies only to income from dividends and interest. (e) Plus 1 per cent on gross income less personal exemptions. (f) Applies only to income from intangibles. (g) Exemptions and rates do not apply to income from intangibles; this is taxed at 8 per cent, with exemptions of \$500 for single persons and \$800 for heads of families. (h) For income from interest and dividends, 3 to 5 per cent on all over \$200. (i) On dividends and interest only. (j) 2 per cent on earned income; 4 per cent on interest and dividends. (k) This includes surtax for teachers' pensions. In addition to this a levy of 60 per cent of the normal tax is made for 1935 and 1936, for emergency relief, and also a 2½ per cent tax on dividends declared by corporations after September 26, 1935.

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was upheld by the Iowa Supreme Court. The corporate income tax in Pennsylvania was upheld by the Pennsylvania Supreme Court. The personal income tax in Pennsylvania was declared unconstitutional in November, 1935. The corporate rate was increased from 6 per cent to 10 per cent. In Massachusetts the tax was increased by a temporary additional tax equal to 10 per cent of the existing tax. The New York 1 per cent emergency personal income tax (in addition to regular tax) was continued for another year. The Virginia law was amended by eliminating provisions for increased exemptions which would have been applicable for

DIGEST OF STATE CORPORATION INCOME TAX PROVISIONS

State	Year when first effective	Kind of corporations exempt	Amount of income exempt (dollars)	Rate of tax (per cent)	Exemption of dividends of other corporations paying income tax to state	Exemption of interest from government
Alabama.....	1933	—	1,000	3	X	X
Arizona.....	1933	Insurance	—	1 —5 (a)	X	X
Arkansas.....	1929	Foreign insurance	1,500	2	X	X
California.....	1929	Public utilities insurance	—	4 (b)	X	—
Connecticut.....	1915	Public utilities, insurance	—	2	—	—
Georgia.....	1930	Insurance, banks	—	4	—	X
Idaho.....	1931	National banks	—	1½-8 (c)	X	X
Iowa.....	1934	Insurance, banks	—	2	X	X
Kansas.....	1933	—	—	2	X	—
Kentucky.....	1936	Banks, insurance	—	4	—	—
Louisiana.....	1934	—	—	4	X	—
Massachusetts.....	1919	Public utilities, insurance	—	2½ (d)	X	—
Minnesota.....	1933	Banks, mines, insurance	1,000	1 —5 (e)	X	X
Mississippi.....	1914	Banks	750	2½-6 (f)	X	X
Missouri.....	1917	Express, insurance, banks	—	2	—	X
Montana.....	1917	Express, national banks	—	2	—	—
New Mexico.....	1933	Express, insurance, banks	1,000	2	X	—
New York.....	1917	Public utilities, real estate, insurance	—	4½	—	—
North Carolina.....	1921	—	—	6	X	X
North Dakota.....	1919	Insurance, national banks	—	3	X	X
Ohio.....	1931	—	—	5 (g)	—	—
Oklahoma.....	1931	—	—	6	X	X
Oregon.....	1930	Insurance	—	8 (h)	—	—
Pennsylvania.....	1935	Insurance, banks	—	10	—	X
South Carolina.....	1922	—	—	4½	—	X
Tennessee.....	1931	—	—	3 (i)	X	X
Utah.....	1931	—	—	3 (j)	—	X
Vermont.....	1931	Public utilities, insurance, banks	—	2	X	X
Virginia.....	1927	Public utilities, insurance, banks	—	3	X	X
Wisconsin.....	1911	Railroads, car, insurance, savings banks	—	2-6 (k)	X	—

(a) Maximum rate applies to all income over \$6,000. (b) Bank rate to be determined by average rate of income plus personal property taxes on business corporations; not to exceed 8 per cent. (c) Maximum rate applies to all income over \$5,000. (d) Bank rate to be determined by Commissioners; not to exceed highest rate applied to business corporations. (e) Maximum rate applies to all income over \$10,000. (f) Maximum rate applies to all income over \$15,000. (g) On income from intangibles. (h) Offset for personal property tax up to 90 per cent of excise. (i) 5 per cent on interest and dividends. (j) Or 1/20 of 1 per cent of value of tangible property, whichever is greater, less property tax offset up to one-third of tax. (k) Maximum rate applies to all income in excess of \$6,000.

INCOME TAXES

State	Total State Revenue	State Collected Revenues derived from Income Taxes	Amount from Personal Income	Amount from Corporate Income	Income Tax Revenues re-turned to local governments	For year ended
Alabama.....	\$28,253	4%	\$578	\$581	0	September 30, 1936
Arizona.....	252	.....	252	510	0	June 30, 1936
Arkansas.....	181 ¹	.....	189 ¹	181 ¹	0	June 30, 1936
California.....	198,632	10	6,526	14,985	0	June 30, 1936
Connecticut.....	26,520	4	none	1,005	0	June 30, 1936
Delaware.....	4,808	17	798	none	0	October 31, 1935
Georgia.....	.....	.....	972	1,388	0	(11 months only)
Idaho.....	.....	.....	411	768	0	January 1—November 30, 1936
Iowa.....	.....	.....	3,222	494	0	(10 months only)
Kansas.....	25,809	6	1,090	534	0	January 1, 1936 to October 31, 1936
Kentucky ².....	.....	.....	925	.....	.....	June 30, 1936
Louisiana.....	70,000 ³	32	17,950 ³	1,274	0	December 31, 1935
Massachusetts.....	148,000	2	3,197	4,500 ³	15,788 ³	November 30, 1936
Minnesota.....	.....	.....	.....	(included in personal)	all	June 30, 1936
Mississippi.....	18,000 ³	3	426	239	0	December 31, 1935 -
Missouri.....	21,199	21	4,429	(included in personal)	0	December 31, 1935
Montana.....	.....	.....	380	350	182	June 30, 1936
New Hampshire.....	16,345	2	410	none	388	June 30, 1936
New Mexico.....	.....	.....	72	108	122	June 30, 1936
New York.....	330,544	45	89,580	59,882 ³ , ⁴	26,106 ³	June 30, 1936
North Carolina.....	50,297	15	1,419	6,304	0	June 30, 1936
North Dakota.....	.....	.....	287	117	0	June 30, 1936
Ohio.....	.....	.....	7,841	(included in personal)	.....	December 31, 1935
Oklahoma.....	43,902	10	4,726	(included in personal)	0	June 30, 1936
Oregon.....	23,410 ³	14	3,300 ³	(included in personal)	0	December 31, 1936
Pennsylvania.....	167,863 ³	8	none	14,027	0	May 31, 1936
South Carolina.....	19,109	11	899	1,293	0	June 30, 1936
South Dakota.....	.....	.....	50 ⁴	49 ⁴	0	June 30, 1936
Tennessee.....	.....	.....	585	373	431	June 30, 1936
Utah.....	13,185	7	972	(included in personal)	729	June 30, 1936
Vermont.....	9,173	6	463	101	0	June 30, 1936
Virginia.....	49,577	5	1,039	1,800	0	June 30, 1936
West Virginia.....	29,511	4	1,150	none	0	June 30, 1936
Wisconsin.....	68,852	18	6,070	6,510	5,538	June 30, 1936

¹ Estimated.

² Enacted in 1936. Returns not available.

³ Approximate.

⁴ Including unincorporated business tax. The collection date was advanced in 1936. Totals have been corrected to cover 12 months period.

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the tax year 1936 and thereafter. The North Carolina constitution was amended to provide that the rate of tax upon incomes shall not exceed 10 per cent. The limit had previously been placed at 6 per cent.

The present status of state income taxes is as follows: 29 States are taxing both personal and corporate income, but two of these (Ohio and Tennessee) tax income from intangibles only. Delaware, New Hampshire and West Virginia tax personal income only. The New Hampshire tax is on income from intangibles only. Connecticut and Pennsylvania tax only corporate income. Altogether 34 States levy some form of net income tax.

Corporation Rates.—Twenty-five States tax corporations at flat rates ranging from 2 per cent to 6 per cent; six at mildly graduated rates. New York levies a tax of 4 per cent on the income of unincorporated businesses.

The productivity of state income taxes reached a new high in 1936 when the New York tax yielded

45 per cent of the State's revenues. Approximately one-third of the Massachusetts revenues were derived from the income tax. The yield in other States ranged from 2 per cent to 21 per cent. Half of the income tax States secured 10 per cent or more of their revenue from this levy. Different accounting methods in the various States prevent the percentage ratios from being strictly comparable. The extreme variations in the productivity of the tax are caused by variations in rates, exemptions, number and size of brackets, and efficiency of administration. In some States the personal income tax proved much more productive than the corporate tax, while in others the reverse was true.

Sharing of Income Taxes.—Only 10 of the 34 income tax States share the tax directly with the local governments. In other States, however, the income tax revenues which go into the state general fund help make possible state aid for local governments, particularly for schools.

LAND AND PROPERTY TAXES

By JENS P. JENSEN

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GENERAL

A comprehensive reorganization of the state government was accomplished in Kentucky. The new Department of Revenue, which absorbed the former administrative tax commission, is in charge of all revenue. In Louisiana, by constitutional amendment, a Department of Revenue was created. Washington rejected an omnibus proposal to amend the tax provisions of the state constitution. An amendment to the constitution of Utah relates to the taxation of tangible property, determination of value, exemptions, and the annual state tax. In Colorado an omnibus constitutional amendment on numerous taxation features was defeated.

POWER TO LEVY

As usual Illinois found it necessary to relax the tax limits in numerous acts, giving some particular category of municipalities and school districts authority to levy for specified purposes. The practice of particular legislation in the South is seen in Louisiana in the proposed constitutional amendment to permit Caddo Parish to assess special taxes, and the statutory amendment of the New Orleans charter in order to restore the taxing power of the city: in Alabama, in the proposed constitutional amendment to permit the Town of Montevallo to levy a property tax: in South Carolina, in authorizing property taxes on the property of the Rural Rehabilitation Corporation in Lee County. Texas and Virginia modified

LAND AND PROPERTY TAXES

their property tax levies for local governments.

TAX LEVIES AND ALLOCATIONS

A Washington law requiring a levy sufficient to raise 5¢ per day per pupil in attendance in common schools in each county was held not to violate the constitutional uniformity rule by reason of requiring different rates in different counties, the benefits being local (50 P. 2d 36). An Illinois statute authorizing the assumption by the Chicago Park District of the indebtedness of the superseded park districts, and the necessary taxes, was held not to violate the uniformity rule (198 N.E. 847). In Texas the allocation of general-fund state taxes, levied locally, to the Brazos River Conservancy and Reclamation District was upheld against the charge that it would release these inhabitants and property of state taxes (91 S.W. 2d 665). Other cases dealt with various points of tax levies (198 N.E. 694, 164, So. 679, 268 N.W. 409). In Illinois a number of statutes were found necessary in order to validate levies, actually made, in excess of the limits in the law. Texas found the same procedure necessary.

STATE PROPERTY TAX

An attempt in Minnesota to restrict, by means of a constitutional amendment, the state property tax to that provided in Section 16, Article 9, of the constitution failed of approval. Kentucky, however, repealed the state tax on real property. Vermont reduced the rate on tangible railroad property and franchises from $1\frac{1}{4}\%$ to $\frac{3}{4}$ of 1%. In contrast, Pennsylvania increased the rate of the state tax on personal property from one mill to four mills.

TAX LIMITATION

In Washington an initiative measure for a constitutional amendment was approved by the voters, under which the aggregate annual rate is limited to 40 mills, and the levy for the University limited to two mills. Port Districts are excepted from this limitation. The voters in Nevada similarly approved a constitutional

limit of 50 mills. There were several significant rejections. Michigan rejected a measure which would have eliminated property taxation entirely. In Georgia a combination of classification and limitation was disapproved; Oregon rejected two limitation measures, and Colorado one. In Pennsylvania a proposed amendment would add a set of tax limitations. In Illinois, Minnesota, and Ohio extension of existing limitations were permitted by statute.

ASSESSMENT

Centralization.—The Wisconsin supreme court approved the capitalization at 6%, and the three-year average stock-and-bond method of valuation, as used by the tax commission (266 N.E. 186). The meaning of "pipe lines," for central assessment, was defined in California (54 P. 2d 18). Washington required corporate taxpayers to furnish information to the tax commission (53 P. 2d 743). The state board of equalization, like the agencies of assessment, is presumed to have acted properly (88 S.W. 2d 471, 90 S.W. 2d 578, 50 P. 2d 150, 57 P. 2d 251).

Administration.—The few States meeting in regular session made numerous detailed changes in the assessment procedure. In California, Constitutional Amendment 42 authorized the use of last year's tax rate on property where the tax on such property is not a lien on land of sufficient value to ensure payment of the tax. As usual, Massachusetts adopted several such measures. In that State the rare question of the propriety of promotional examination for position as deputy assessor arose (197 N.E. 25). In New Jersey the membership of the State Board of Tax Appeals was increased from five to seven; the State Tax Commissioner is permitted to certiorari judgments of the State Board of Appeals on behalf of any subdivision of the state; and a uniform procedure is provided for in connection with state taxes. In New York the Public Service Commission is required to furnish to the Tax Commission the estimates of cost new, depreciation,

and present value presented by utility corporations in any valuation matter. Other legislation in New York related to use of tax maps. In Alabama homesteads must be separately valued and listed, under 1936 legislation. Mississippi authorized the board of supervisors in each county to change, correct, revise, and revalue assessment. A number of measures in Virginia affected the assessment of certain classes of property and enlarged the remedy for relief from assessment.

Valuation.—The constitutional provision in Indiana for a uniform rate of assessment is not violated by the privilege of deduction of debts (200 N. E. 233). In California a shift by an assessor from a 50% to a higher valuation is not improper (52 P. 2d 959). An interesting question was raised in a Nebraska case (264 N. W. 335) as to whether the effect of high tax rates in a school district should be allowed as a reason for reduction of the assessed valuation. Other cases involved the propriety of the valuation (181 A. 854, 182 A. 866, 186 A. 105, 198 N. E. 1, 1 N. E. 2d 46, 3 N. E. 2d 546, 924, 268 N. W. 740, 89 S. W. 2d 9, 91 S. W. 2d 47).

The courts annually decide many assessment issues of a technical character. One such is the propriety of the legal description of the assessed property (181 A. 643, 186 A. 665, 168 So. 473). Another is that errors in the valuation or listing cannot be rectified by subsequent assessment of "omitted property" (51 P. 2d 717, 58 P. 2d 590, 60 P. 2d 804). The tax law may require separate assessment of the component elements of real estate (184 A. 764, 164 So. 891). Oil leases especially frequently give rise to separate assessment (95 S. W. 2d 490, 54 P. 2d 776). Certain intangibles are adjudged to have a business *situs* for taxation (183 S. E. 234, 185 S. E. 454). A *situs* is determined for ferry boats and other floating property, in Virginia (183 S. E. 514). The tax liability of property moving in interstate commerce was ruled on (53 P. 2d 221, 57 P. 2d 803). The propriety of legally required notice of assessment was ruled on (165 So. 427).

The tax liability of a conditional seller was decided (50 P. 2d 418).

CLASSIFICATION

In North Carolina the voters approved a classification amendment to the constitution of the standard form. In Georgia, however, an amendment combining classification and tax limitation was rejected by two-to-one vote. Other measures relative to classification were minor ones. Ohio fixed a basis of income yield of patents and copyrights for taxation purposes. Kentucky increased the tax on the recording of certain instruments.

The Oklahoma two-mill tax on money was held not unconstitutional as attempted exemption of property or failing to state purpose of the levy (50 P. 2d 725). The Kentucky recording tax was upheld (94 S. W. 2d 612). In Michigan the gross premiums tax paid by insurance companies in lieu of other taxes, is not in lieu of the recording tax (268 N. W. 763). In Kansas non-payment of the mortgage registration tax does not render the evidence inadmissible in case of building and loan associations which are taxed in another way (58 P. 2d 1151). The Oklahoma registration tax was similarly interpreted, it being permissible to pay the tax any time prior to admission as evidence (57 P. 2d 597).

EXEMPTIONS

Homestead.—The voters in North Carolina approved a constitutional amendment which authorized the General Assembly to exempt homesteads not in excess of \$1,000. An amendment permitting the exemption of homesteads in Arkansas was also adopted. A noteworthy state-wide survey of the effects, upon the tax base, of homestead exemptions at various levels was completed in Oklahoma, and data showing the actual effects in Mississippi and Florida are in process of preparation. At the 1935 Conference the National Tax Association provided for a committee to study this subject. The committee presented a preliminary report at the 1936 Conference. The committee

was continued, enlarged, and given extended scope, and instructed to report at the 1937 Conference. The Florida exemption was interpreted (165 So. 353), as was also the exemption in Mississippi (168 So. 607).

Industrial.—In Louisiana three exemption measures were approved, one being a constitutional amendment exempting certain industries from certain taxes for a period of 10 years, and another fixing the rate of assessment of tung oil lands at 10% of their value for a period of 10 years. In Alabama one statute exempted rural electric systems for five years; another exempted for 10 years manufacturing of garments or wearing apparel. In South Carolina two separate statutes exempted manufacturing from county taxes in two separate counties. These are examples of the unusual practice in that State of legislating on tax matters for individual counties. Outside of the Old South the only legislative exemption for the encouragement of industry was a New York law which exempted until 1938 the alterations and improvements on existing buildings, except those increasing the size of the building, from local taxation. In New Jersey the Society for Establishing Useful Manufactures, which by its charter is exempt from all state taxes, is exempt from the 5% state gross receipts tax on corporations engaged in the production and sale of hydroelectric power (184 A. 219). Certain exemptions for the encouragement of industry in Florida and Mississippi, respectively, were interpreted (169 So. 216, 165 So. 620).

Public Property.—In Missouri the exemption provided in a statute authorizing toll bridge trustees to acquire any bridge in trust for the State or its subdivisions, and deeming such bridge to be public property was held unconstitutional as attempting to exempt private property (92 S. W. 2d 718). In California water rights acquired by city and county indirectly from riparian owners were held to be "land" and excepted from the general constitutional exemption of public property (54 P. 2d 462) under a policy of protecting the revenue

of the smaller communities. A Virginia decision (184 S. E. 189) held that intangible assets of firemen's mutual aid association were taxable, not being public property. In Oregon, property conveyed to a private corporation in trust for the maintenance of a chair of instruction was held not exempt as property of the State (53 P. 2d 33). So also intangible property bequeathed to trustees with direction to spend the income for Cincinnati University and Art Museum was held taxable, as not used exclusively for charity (199 N. E. 701). Exemption of public property was interpreted (2 N. E. 2d 330, 185 S. E. 6, 168 So. 286, 50 P. 2d 1145, 51 P. 2d 266). The exemption of public bonds was upheld (185 S. E. 654, 90 S. W. 2d 1029).

Veterans.—The pressure of veterans to come under the property tax exemptions allowed by many States was resisted in several decisions. In Michigan an act exempting homesteads of Spanish War veterans and empowering local governments to make similar exemptions, exempts from state taxes only until the local governments have allowed such exemptions (265 N. W. 755). Three California decisions (51 P. 2d 431, 52 P. 2d 1019, 58 P. 2d 1278) restricted the exemption privilege to those who actually served prior to the armistice. Veterans exemption was interpreted elsewhere (186 S. E. 504, 53 P. 2d 939).

Other Exemptions.—The voters of Colorado approved a constitutional amendment which changed and made more definite the exemptions allowed to property used for religious, educational, charitable, and cemetery purposes. A statute to the same purpose was adopted in South Carolina. Mississippi increased the amount of the exemption of personal property for private use. Minor changes in the exemption privileges for educational, veterans, religious, fraternal or other uses, were made in Alabama, Massachusetts, New Jersey, and New York.

Something akin to exemption is provided in Massachusetts by certain lump-sum payments in lieu of taxes on property of cities and towns in

VII. PUBLIC FINANCE AND TAXATION

other cities and towns for airport purposes, and in Virginia by a license tax in lieu of state intangible property taxes on firemen's and policemen's pension funds. More important was the approval in Colorado of a constitutional amendment providing for an annual graduated ownership tax on motor vehicles in lieu of the *ad valorem* tax, and the statutory substitution in Massachusetts of an excise tax on certain motor vehicles in lieu of a local property tax.

In Oklahoma a decision held the chapter house and certain furnishings of college fraternities and sororities exempt, under the state constitution (53 P. 2d 1129), which is contrary to a recent decision in the neighboring State of Kansas. A Florida educational institution was held exempt (168 So. 232), as was also a Colorado institution (56 P. 2d 933). An adverse decision was given in New Jersey (184 A. 412). Exemption on the ground of charity use was ruled on (185 A. 575, 187 A. 204, 199 N. E. 781, 1 N. E. 2d 6, 3 N. E. 2d 552, 261 N. W. 569); so also as to certain points on the exemption of Indian lands (52 P. 2d 683, 54 P. 2d 117). In New Mexico the tax on the production of oil wells was held not to preclude tax on other property in connection with the wells (58 P. 2d 1204). In Arizona a taxpayer being compelled to pay taxes under protest on property which is afterwards found to be exempt, may recover in full from the county, and is not required to pursue various governmental units to which tax was apportioned (50 P. 2d 15).

TAX DELINQUENCY

Collection.—It is reported that the percentages of uncollected taxes have greatly decreased; nevertheless, in view of the small number of regular legislative sessions, the volume of legislation on the collection phase of property taxation was very large. Much of it was mixed in character and attributable to the recent emergency. Extensions of time for the payment of taxes were allowed in New York and South Carolina, and Virginia postponed the sale of 1935

delinquent real estate. Rhode Island required personal property taxpayers to pay under penalty of suspension of motor vehicle registration. Virginia authorized optional release of penalties conditioned upon payment on stated date of 1934 and prior taxes; and New Jersey extended during 1936 the privilege of paying state school taxes in scrip. West Virginia postponed sales, while New Jersey removed restrictions on the sale of tax certificates. Massachusetts and Mississippi also adopted legislation relative to tax sales.

Administration.—New Jersey empowered the State Tax Commissioner to bid in and acquire properties under execution based on claim for taxes, and extended the term of "tax collectors" in municipalities with populations over 300,000. In South Carolina a Forfeited Land Commission was established in Orangeburg County, provision was made for public sale of lands acquired by such a commission in McCormick County, and a later act regulated the disposition of lands similarly acquired elsewhere. Two acts of Virginia regulated the disposal of delinquent lands. Alabama improved the assessment and collection of taxes in counties of 110,000 population or more; and in that State the perennial subject of the tax collectors' fees was the objective in two separate acts. The office of collector of taxes was the subject matter of Massachusetts and Pennsylvania statutes. The discharge of the functions of the collectors gave rise to two decisions (165 So. 71, 86 S. W. 2d 167). The Minnesota statute authorizing the county auditor to attach rents was upheld (266 N. W. 867).

Installment Payment.—California and Nebraska provided for the payment of delinquent real estate taxes over a 10-year period. Provision for paying delinquent or current taxes in installments, with or without adjustments in penalties, was made in Minnesota, Mississippi, New Jersey, New York, Rhode Island, Pennsylvania, and Virginia. In Illinois and Montana (1 N. E. 2d 855, 50 P. 2d 959) payment of delinquent taxes in in-

installments, with waiver of interest and penalties, was held unconstitutional as providing non-uniform taxation, and postponing payment of obligations to the State.

Compromises.—In a number of separate measures provision was made in New York and New Jersey for cancellation, reduction, or compromising unpaid taxes with possible adjustment of interest or penalties. In most cases the compromise is left optional with the localities. A proposal for a constitutional amendment in Louisiana relative to the release of real estate taxes was defeated. Two separate measures in Pennsylvania provided for abatement of penalties and interest on certain delinquent taxes, and for payment in installments. The Florida statute of 1935 authorizing the compromising and adjusting of "omitted subsequent taxes" upon delinquent lands was held unconstitutional (166 So. 817); so also was the 1935 Nebraska act authorizing installment payment of delinquent taxes (268 N. W. 317). The Texas statute permitting graduated discount for prepayment of taxes was held unconstitutional under the uniformity rule of the tax rate (87 S. W. 2d 706). Two Louisiana decisions involved similar issues (167 So. 147, 760). In Kansas, extension of tax payment was approved (56 P. 2d 65).

Redemption.—Three separate Alabama statutes dealt with the redemption of property sold for taxes. Two acts of Louisiana had the same objective. And measures to the same purpose were enacted in New York, Rhode Island, and West Virginia. Detailed provisions for tax liens on

real estate were made in three statutes of Massachusetts, and in Louisiana and Virginia. When the mortgagee pays taxes on mortgaged real property he acquires rights. These were defined in several decisions (181 A. 603, 182 A. 64, 656, 200 N. E. 719, 262 N. W. 671, 267 N. W. 307, 161 So. 867, 167 So. 784, 168 So. 7, 89 S. W. 2d 1072). Two Georgia decisions ruled on the rights of remaindermen in the role of payer of delinquent taxes on life estate (184 S. E. 733, 185 S. E. 157). The rights of purchasers in general was ruled on (182 A. 832, 185 A. 450, 187 A. 143, 166 So. 358, 262 N. W. 6, 268 N. W. 36, 92 S. W. 2d 1011).

Notice.—An Ohio act required the publication of delinquent tax lists, and set aside a portion of the delinquent collections for relief. Delinquency notice was required in Alabama, Massachusetts, New York, and South Carolina. Tax sales of delinquent property require strictly adequate notice (185 S. E. 231, 166 So. 358, 266 N. W. 464, 94 S. W. 2d 537, 54 P. 2d 46, 56 P. 2d 742, 57 P. 2d 322, 58 P. 2d 139). The sales must conform strictly to the legal requirements, since they involve the taking of property (198 N. E. 78, 185 S. E. 911, 186 S. E. 441, 187 S. E. 34, 167 So. 44). Tax deeds issued after sale must strictly conform, for the same reason, to any requirements set up (184 S. W. 476, 592, 165 So. 110, 167 So. 366, 169 So. 209, 262 N. W. 361, 50 P. 2d 179, 446, 676). The person who takes title under tax deed does so subject to lien of subsequent taxes (186 S. E. 820, 165 So. 268, 50 P. 2d 774).

VII. PUBLIC FINANCE AND TAXATION

CORPORATION AND BANK TAXES

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THE REVENUE ACT OF 1936

This act contains some modifications applicable to corporate income. As in the 1935 act the normal tax rates are graduated on the amount of the income, but lower in the lower brackets, rising from 8% on the first \$2,000 to 15% on the amount in excess of \$40,000. A new feature is the surtax on undistributed earnings which ranges from 7% on the first 10% of adjusted net income to 27% on the income in excess of 60% of the "adjusted" undistributed income. There are special taxes on corporations improperly accumulating surplus and on personal holding companies. The excess-profits tax of the 1935 act is retained, but the companionate capital-stock tax is reduced from \$1.40 to \$1.00 per \$1,000 of the adjusted capital value. Banks and trust companies and a number of kindred corporations are not subject to the tax on undistributed earnings.

CORPORATE INCOME TAX

Under a constitutional amendment adopted at the November elections, Colorado may impose an income tax. In North Carolina the constitution now permits an income tax at a maximum rate of 10%, the maximum rate hitherto having been 6%. A Kentucky statute provides, for the first time, for a tax on corporate income at the rate of 4%. The New York 6% emergency franchise tax was continued for another year. In Pennsylvania the corporate income tax was increased from 6% to 10%, for one year; and the definition of net income was modified. The practice of exempting any favored industry in the South was extended in Louisiana where water transportation corporations are exempt from the income tax. Louisiana also made the income tax returns confidential. Oregon corporations were allowed to deduct charitable contributions not in

excess of 5% of the taxable income. A number of amendments in Virginia related to the taxation of the income of parent and subsidiary corporations, and Massachusetts modified the taxation of dividends.

The Pennsylvania 1935 net corporate income tax of 6%, being a proportional tax, was held not to violate the constitutional uniformity requirement (184 A. 37). The fact that this law does not apply to banks and other financial corporations does not render it non-uniform so as to make it unconstitutional. In North Dakota, where the income tax is not regarded judicially as a "property tax," this tax was unsuccessfully attacked on the ground of violating constitutional uniformity (265 N.W. 859). The South Carolina tax of 5% on dividends in excess of \$100 was upheld as against a charge that it violated the required constitutional uniformity. A number of minor points were decided (197 N.E. 509, 525, 1 N.E. 2d 508, 612, 183 S.E. 873, 168 So. 679, 265 N.W. 672, 268 N.W. 202, 95 S.W. 2d 39, 52 P. 2d 806, 58 P. 2d 393, 60 P. 2d 417).

UNINCORPORATED BUSINESS TAX

The New York unincorporated business tax, enacted as a 1935 emergency measure, was continued at the same rate, 4%, during 1936, and a separate act required the prorating of the exemption allowed under this Act, when the period covered is less than one year.

CORPORATE FRANCHISE TAXES

Massachusetts provided for a temporary additional excise tax on corporations, and changed the method of taxing the machinery of manufacturing corporations and others. New York requires one-half of the franchise, or \$25, to be paid with the report, and made other changes in the franchise taxes on insurance compa-

CORPORATION AND BANK TAXES

nies and public utilities. New Jersey imposed franchise taxes on foreign corporations in proportion to their gross receipts in the State as against their total gross receipts, and modified the taxation of corporations in process of reorganization. In Oregon Federal corporations are exempted from the annual license fee.

The Tennessee corporate privilege tax, measured by the capital invested in the State, is not invalid because such capital includes tax-exempt property (95 S. W. 2d 620); and this tax is properly exacted from the domestic corporation which had leased all its property and maintained corporate existence solely for the purpose of receiving rentals and distributing such income (92 S. W. 2d 408). In Alabama, however, collection of interest and leaving it temporarily on deposit within the State does not constitute "doing business" so as to render the corporation liable to the franchise tax (165 So. 838). The Delaware superior court clarified the question of the amount of franchise tax in case of a merger (184 A. 873). Three cases (51 P. 2d 1093, 56 P. 2d 939, 60 P. 2d 432) arose out of the California change from an *ad valorem* tax on the franchise prior to 1930 to the present tax in lieu thereof. Only minor issues were involved elsewhere (199 N. E. 265, 266 N. W. 690, 169 So. 526, 52 P. 2d 1040).

UTILITIES

Pennsylvania increased the gross receipts tax on utilities to 2% for the last half of 1936. Louisiana levied an additional 1% of gross receipts of transporters of natural gas by pipe line. Texas increased the gross receipts tax on telegraph companies to 3¼%, and increased the graduated gross receipts taxes on telephone and other utility corporations. In New York three separate acts modified taxation of utilities. Two cases (265 N. W. 722, 53 P. 2d 308) were concerned with definitions of utilities.

OTHER CORPORATION TAX LEGISLATION

Louisiana exempted water transportation corporations from the gen-

eral license tax as well as from the income tax. New York continued the additional stock transfer tax to June, 1937. Rhode Island extended to insurance companies the time for paying premium taxes. Texas increased the premium taxes on insurance companies and provided for the taxation of fraternal benefit companies doing an insurance business. California provided for the restoration of corporate powers suspended for failure to pay taxes. Three cases (185 S. E. 449, 267 N. W. 427, 94 S. W. 2d 601) related to the liability to the gross premium taxes of insurance agencies.

BANK TAXATION

There was very little legislation on the subject of bank taxation. Pennsylvania made a minor change in the annual report date. There was also very little litigation. The Indiana tax on bank stock of 25¢ per \$100 of capital, surplus, and undivided profits was attacked, and upheld against the charge that other moneyed capital, specifically in finance and investment companies, was taxed at a lower rate (200 N. E. 233); and the tax on intangibles of banks and trust companies payable by the banks in lieu of other taxes, is in lieu of other taxes on intangibles and not in lieu of bank's tax on owned real estate (199 N. E. 567). The remaining cases involve only minor issues (262 N. W. 422, 267 N. W. 519, 1 N. E. 2d 935, 94 S. W. 2d 299, 59 P. 2d 670).

The Kentucky corporate income tax of 4% is not applicable to banks and insurance companies. Such is also the case with the Pennsylvania temporary corporate income tax. Banks are not subject to the 1936 Federal tax on undistributed earnings.

The exemption enjoyed in Vermont by national banks from the 2-mill tax on deposits bearing interest of less than 2% was repealed. Pennsylvania increased the rate of tax on banks and savings institutions from 4 mills to 8 mills, for one year; and the rate on title insurance and trust companies from 5 mills to 8 mills, for one year only. Minor legislation affecting the rate was adopted in Virginia. Louisiana repealed the oc-

VII. PUBLIC FINANCE AND TAXATION

cupational license tax on state banks, this tax not being enforceable against national banks. South Carolina ex-empted from property taxation the preferred stock and capital notes issued by banks.

AUTOMOBILE TAXES

BY BEULAH BAILEY

NEW YORK STATE DEPARTMENT OF TAXATION AND FINANCE

CONTRIBUTION TO THE TAX STRUCTURE

Motor taxes in 1935 comprised 12½ per cent of the aggregate of Federal, state and local taxes. The total tax bill of the motorist including indirect as well as direct taxes was \$1,300,000,000. In 1934 it was \$1,048,061,267. The number of cars registered increased from 24,933,403 in 1934 to 26,221,052 in 1935 and the gasoline consumption increased from 15,454,481,000 gallons in 1934 to 16,349,279,000 gallons in 1935.

There is much confusion in published statements with reference to motor vehicle taxation. The statements of the railroad interests would make it seem that automobiles, and especially the trucks and buses, contributed far less than their share to the support of government, while on the other hand the statements and figures of the motor interests would prove the direct opposite. They state that not only are the motor interests bearing their full share of the tax load but motor monies are being diverted from highways to pay for functions of government foreign to the interest of the motorists; if there be such functions.

TAX FUND DIVERSIONS FROM HIGHWAY CONSTRUCTION

Just what should be the proper sources of revenue for highway purposes is a debatable question. It is not the motorists alone who benefit from good highways nor is the increased cost of government attributable to increased highway costs. Whether or not gasoline taxes should be diverted is also a debatable question. Twenty-eight States now divert them. At the November, 1936 election the people of Louisiana ratified

a constitutional amendment permitting parishes and the City of New Orleans to use gasoline tax monies for social security. There is no doubt but what diversion has grown. In 1925 it was 2.5 per cent of the total motor vehicle revenue of \$407,000,000. In 1930 the total revenue from motor vehicles was \$850,000,000. The diversion was 3 per cent. In 1934 the total revenue from automobiles was \$874,000,000 and the diversion was 13.6 per cent.

Since 1933 Federal aid has been a growing factor in highway construction. For the fiscal year ended June 30, 1935 Federal aid for highways was \$317,000,000. The Federal Government's revenue from the gasoline tax during that same year was \$161,500,000, and from the various excise taxes on motor vehicle parts the revenue was \$105,000,000. The Federal Government expended \$51,000,000 more on roads in 1935 than it derived from motor vehicle taxes. During the fiscal year ended June 30, 1936 the Federal Government awarded contracts for more road improvement than at any time in the history of the country. It was for 22,300 miles of highway at an estimated cost of \$489,000,000 of which the Government furnished \$393,000,000, the States putting up the rest of the money.

These figures in no way establish a brief either for or against diversion, nor do they prove whether the motor vehicle tax burden is or is not too heavy, that is, from the viewpoint of government as a whole, not from the viewpoint of a special interest. These figures do show that motor vehicle revenues are below highway and street expenditures. The highways and streets are the road beds for the automobiles. Until the mo-

AUTOMOBILE TAXES

torists are paying for the capital investment, the carrying charges and the maintenance charges, they are making no contribution to general government.

MOTOR VEHICLE FEES

During the past ten years there has been a decrease in the per car burden for motor vehicle fees. In 1925 the average fee per car was \$13.07; in 1930, \$13.41; and in 1935, \$12.30.

Kentucky and South Carolina were the States that made in 1936 drastic decreases in the registration fees of passenger cars. Beginning Jan. 1, 1937 the registration fee in Kentucky was \$4.50 on all passenger cars and on farm trucks of 3,000 lbs. or less capacity. This makes the sixth State with a flat rate. The others are Arizona, California, Georgia, Oregon and Washington. In these States the gas tax rate is 5¢, 3¢, 6¢, 6¢, and 5¢ respectively. Kentucky's gasoline tax is 5¢.

South Carolina reduced the rate on passenger vehicles weighing 2,000 lbs. or less from \$9 to \$1 and for each additional 500 lbs. from \$3 to \$1. The motorcycle fee was reduced from \$5 to \$1. Formerly the minimum for trucks was \$30. That has been reduced to \$4 for trucks of less than one ton and to \$7.50 for trucks from one ton to one and a half tons.

TRAFFIC SAFETY

Safety for traffic rather than fees is today the unsolved problem of the motor vehicle administrators. The States and the Federal Government are joining forces so as to make the highways safer. This cooperation is coordinated and promoted through the Accident and Prevention Conference set up last winter by the Secretary of Commerce at the instigation of the President. One activity of the Conference is to have drivers' license laws in all States. Kentucky passed such a law in 1936. There are now ten States that do not require driver licenses. Later in the year 45 state governors attended a conference in Washington under the direction of the

Uniform Traffic Regulations Subcommittee of the Conference and formulated a program.

In October, 1935 the Motor Vehicle Administrations of five eastern States held a conference. One of the conferees was Connecticut which for a year has had a State Traffic Commission. From this Conference emanated the idea of the worthwhileness of such a Commission. New York State subsequently by an act of the Legislature created such a Commission. It is composed of the Commissioner of Motor Vehicles, the State Highway Commissioner and the Superintendent of State Police. The purpose of the Commission is to coordinate the facilities of the Highway Commission, the State Police and the Motor Vehicle Department in making the highways safe for pedestrians and motorists.

MOTOR FUEL TAX

The gasoline or motor fuel tax has not been as stabilized as the registration fees. In 1925 the average motor fuel tax per motor vehicle was \$7.44, \$5.63 less than the vehicle fee; in 1930 it was \$18.62, \$5.21 more than the vehicle fee, and in 1935 the motor fuel tax per car was \$23.52, \$11.22 more or nearly twice as much as the motor vehicle registration fee. The total revenue from the state taxes, excluding the Federal, was \$616,851,671 in 1935 as against \$565,027,000 for 1934. For 1934 the weighted average gasoline tax rate was 3.66¢, in 1935 it was 3.8¢.

During 1935 the rate was increased in Connecticut, Delaware, Nebraska, New York and Pennsylvania. In 1936 there was only one change in a state gasoline tax rate—New York State, on July 1, dropping the 1¢ emergency tax. At the November, 1936 elections the people of Louisiana ratified a constitutional amendment increasing the City of New Orleans' tax rate from 1¢ to 2¢.

A new motor fuel is Diesel oil. Many states will require special legislation to cover it. This year Kentucky placed a tax of 5¢ a gallon on Diesel oil. New York State taxes Diesel oil the same as gasoline but re-

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quires the operators of cars using Diesel oil to be licensed as distributors for tax purposes. The license fee is 25¢.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN TAXPAYERS' LEAGUE, Munsey Building, Washington, D. C.	NORTH AMERICAN GASOLINE TAX CONFERENCE, 844-46 Consolidated Bldg., Indianapolis, Ind.
NATIONAL HIGHWAY USERS CONFERENCE, National Press Building, Washington, D. C.	TAX POLICY LEAGUE, 309 East 34th Street, New York City.
NATIONAL TAX ASSOCIATION, 195 Broadway, New York City.	TAX RESEARCH FOUNDATION, 302 East 35th Street, New York City.
NEW ENGLAND STATE TAX OFFICIALS ASSOCIATION, Room 236, State House, Boston, Mass.	TAX REVISION COUNCIL, 850 East 58th Street, Chicago, Ill.

DIVISION VIII

PUBLIC RESOURCES AND UTILITIES

FEDERAL SURVEYS AND MAPS

BY W. L. G. JOERG

RESEARCH EDITOR, AMERICAN GEOGRAPHICAL SOCIETY

NATIONAL TOPOGRAPHIC MAPPING

The urgent need of expediting the topographic mapping of the United States, of which the widespread implications were discussed in *THE AMERICAN YEAR BOOK* for 1935 (pp. 261-264), has been recognized by Congress in two ways, one by increased appropriation to the U. S. Geological Survey and the other by the introduction in the Senate of a resolution requesting the Secretary of the Interior to submit a report and plan for the completion of the mapping of the country.

The regular appropriation to the Survey for the fiscal year ended June 30, 1936, was, in view of the decreasing availability of emergency funds, increased to \$2,285,500 from the \$1,631,000 of the preceding year, and provision was made for a little more than \$2,800,000 for the fiscal year 1937. Including the emergency and other exceptional funds, the aggregate expenditures for which the Geological Survey was responsible during the 1935-36 fiscal year amounted to about \$4,620,000. Of these funds about \$1,720,000 were spent for topographic surveys and \$318,000 for the production of geologic and topographic maps. About 18,500 square miles of new area was topographically surveyed in 43 States; these surveys will yield 139 new contoured sheets, of which about 60 per cent will appear on the standard scale of 1:62,500. In addition,

31,600 square miles were surveyed by air photography for the production of planimetric maps, *i.e.* maps without contours, usually published on the scale of 1:31,680 for the areas so mapped in Louisiana and 1:24,000 for those so mapped in the Tennessee River Basin. In the latter area rapid progress has been made, a total of 325 published sheets now being available as against the 45 sheets that had been issued at the time of the last report (*THE AMERICAN YEAR BOOK*, 1935, p. 264). With 308 of these sheets and a few contoured sheets previously published practically the whole of the Tennessee River Basin east of Chattanooga has been covered.

The Senate resolution calling for a report and plan for the completion of the mapping of the United States was introduced by Senator Hayden of Arizona (74th Congress, 2nd Session, Senate Resolution 281, April 17, 1936). It reads: "*Resolved*, that the Secretary of the Interior is hereby requested to submit to the Senate at the beginning of the next session of Congress a program for expediting the topographic mapping of the United States in an economical manner within a period of years and the estimated total and annual cost thereof both in the field and in the District of Columbia."

LAND CLASSIFICATION SURVEYS

Soil Conservation Service.—Air photography has also been widely ap-

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plied in the work of the Soil Conservation Service, which in March, 1935, was transferred to the Department of Agriculture, this bureau having been established in October, 1935, as the Soil Erosion Service of the Department of the Interior. "Each project area is mapped first from the air and then in detail to show the field lay-out of every individual farm, the location of fences, wooded areas, streams, and other physical features. With these maps as a basis, field workers of the Service and the farmer together draw up practical plans for the stabilization of all eroded areas. These plans, which may call for a considerable reorganization of farming practices, become the basis for cooperative 5-year contracts between the farmers and the Government." For the largest single air photographic project yet planned by the Soil Conservation Service the contract was let early in 1936. This project comprised 118,000 square miles in the "dust bowl" of southwestern Kansas, southeastern Colorado, northeastern Texas, and northwestern Oklahoma, the scale of the photographs being 1:20,000. An air photographic survey of Puerto Rico was also contracted for, a project of about 4,000 square miles.

TVA.—An interesting technique has been applied to its land classification work by the Tennessee Valley Authority. This constituted an adaptation by the geographers on its staff, with a view to the necessarily greater demands of speed, of a method of detailed field analysis recently introduced into geographic work. The field men appraise the land by 200-acre units, a fractional notation being used to characterize the quality of the land. Physical conditions are expressed by digits in the denominator, economic and land use conditions by digits in the numerator. Physical conditions include character and degree of slope, drainage, erosion, stoniness, rock exposure, soil depth, soil fertility; economic conditions include type of utilization (farming, pasture, forest, recreation, village and urban, industrial), type

of crop or animal husbandry, field sizes, amount of idle land, quality of farmsteads. Grouping the units by their fractional indices, five classes of land are established varying from I to V in increasing order of seriousness of their agricultural problems, Class V representing land suitable only for forest, wildlife, or recreational use. The areas belonging to the different classes are then delineated on an air-photograph mosaic of the region, generally on the scale of 1:24,000, and their fractional indices added. A fundamental document thus becomes available for intelligent land planning.

Map Symbols in Land Planning.—The widespread development of land planning, especially as fostered by the National Resources Committee and the 46 state planning boards that have been established under its aegis, has created a large output of planning maps. The need for reasonable standardization of symbols on such maps has led to the publication by that Committee of a booklet with key charts entitled "Suggested Symbols for Plans, Maps, and Charts" (planographed Jan., 1936). The symbols displayed differentiate among the various types and features occurring in land use, zoning, conservation, recreation, water resources, transportation, power transmission, and works and structures.

NEW HISTORY OF PUBLIC LAND SURVEYS

A number of new publications, issued by Federal bureaus themselves or as a result of committee recommendations, call for mention. In 1933 a committee of the Board of Surveys and Maps submitted a report calling attention to the desirability of having a historical survey prepared dealing with the instructions and practices that were followed in the execution of the early public-land subdivisional surveys. Although such a history would necessarily deal mainly with activities that are the primary function of the General Land Office, that bureau, while prepared to supply information for a

FEDERAL SURVEYS AND MAPS

given small area, was not in a position to treat the subject as a whole. The interest taken in the matter by Professor J. S. Dodds of Iowa State College was therefore welcomed. As a result of his interest an excellent work has now been published by a member of the civil engineering faculty at the college, Professor L. O. Stewart, entitled *Public Land Surveys: History, Instructions, Methods* (Ames, Iowa, 1935). So far as known "this book is . . . the only treatise which attempts to trace the development of the technical aspects of public land surveys. Most books on the public land surveys have dealt with contemporary instructions and the related rules, and problems of re-surveys, relocation, re-establishments, etc. Similarly, each current manual of the General Land Office has given the rules then in force, with little or no discussion of the evolution of those rules. He who would study the changes must refer to earlier editions of the manual, of which there were five prior to the current 1930 manual, namely, 1855, 1881, 1890, 1894, and 1902. Few of these earlier editions, are extant, however, even in the larger libraries, so the student or surveyor finds it difficult to pursue his studies" (from the preface). The topics dealt with in the book are the origin and use of the rectangular system, history of the public land surveys and the relevant legislation, contract and direct systems of surveying, workaday life of early surveyors, the development of instructions and field techniques, and the evolution of the methods of establishing section corners. Taken in conjunction with this book the wealth of valuable but somewhat amorphous material in such a standard work as Thomas Donaldson's *The Public Domain* (3rd edition, 47th Congr., 2nd Sess., House Misc. Doc. 45, Part 4, Washington, 1884) finds its proper setting.

PLANE COORDINATE SYSTEMS BY STATES

Another report emanating from the Board of Surveys and Maps is the "Report of the Subcommittee on

Plane Coordinates" (37 pp., mimeographed, Feb. 11, 1936). It deals with the advisability of adopting a standard plane of reference for each State as a basis for all the land, municipal, private-property, and other large-scale surveys made in that State instead of basing them on numerous different coordinate systems having local points of origin as at present. The use of the state-wide system is facilitated by the fact that the U. S. Coast and Geodetic Survey is computing and publishing appropriate tables by States. Eight States have already been covered, including North Carolina, Tennessee, Minnesota, and California. From these tables the positions of all points triangulated in that State by the Coast and Geodetic Survey can be directly read off in terms of the system of plane rectangular coordinates adopted for that State. Even for the States for which the computations have not been published engineers are in a position to determine the values for themselves by means of other data published by the Survey. The planes of reference for the rectangular coordinates of the state systems represent planes tangent to the earth's surface at a point in each State so to reduce to a minimum the marginal distortion when its area is projected on the plane. The type of projection ordinarily used is either Lambert's conformal or the transverse Mercator, depending on the shape and areal trend of the State. In a number of large States several tangent planes are employed (and hence coordinate systems), amounting to five in the case of Texas and six in the case of California (Texas, although larger, requires fewer because more compact). In addition to standardizing the basis for all large-scale surveys the proposed scheme has the advantage of linking this type of surveying to an absolute system, *viz.* the astronomical data of geodesy. It has been adopted in New Jersey and Massachusetts and is being given consideration by at least seven other States. Adoption, of course, calls for the necessary legal provision, but, as one engineer

expressed it, the use of the system for land survey descriptions in his State would be worth while if it took 50 years to put such legalization on the statute books.

TREATISE ON CARTOGRAPHY

A publication entitled *Cartography* by C. H. Deetz (Coast and Geodetic Survey Spec. Publ. No. 205, 82 pp., 1936) is the first American treatise attempting to deal with the subject as a whole and especially with the principles underlying the preparation of modern scientific maps. In so doing the types of maps issued by and the procedures and point of view of the Coast and Geodetic Survey orient the discussion. For this reason no treatment must be expected by the reader of the wide range of "applied" maps, such as population maps, economic maps, and others that reflect the distinctive fields of inquiry of the modern science of geography. Nevertheless, the excellent discussion in this work of such questions as the critical appraisal of source material and the principles of generalization, have universal validity. In addition to a chapter on map projections, with a brief guide to their identification, there are sections on the aspects of physical geography embodied in maps, the technique of compilation, scales, the representation of relief, the role of lettering, and the processes of engraving and printing. Among the numerous plates are samples of earlier Coast and Geodetic charts, one of which, a complete topographic map of the vicinity of West Point on the Hudson (Chart No. 282, scale 1:40,000, published in 1907) showing contours, woodland, rock exposures, marsh, roads, field boundaries, houses, lettering, all in black and white only and in perfect clarity, bears full comparison with the best similar work of the military-geographical institutes of Europe. There is also reproduced one of the vignettes of the entrance to San Francisco Bay from a chart of 1853 by engravers to whom Whistler owed his early inspiration when he was an employee of the Coast and Geodetic Survey.

RECENT MAPS

In the field of Government map publications the outstanding achievement is the completion of the Sectional Airway map of the United States in 1:500,000 published for the Bureau of Air Commerce of the Department of Commerce by the Coast and Geodetic Survey. Thirty sheets issued during the past year have completed the total of 87 sheets. The significance of this undertaking as the first complete sheet map of the United States on a relatively large scale showing relief has repeatedly been emphasized here (*THE AMERICAN YEAR BOOK*, 1929, p. 33; 1924, pp. 225 and 754-755; 1935, pp. 264-265).

Another series that has been completed during the past year is the map of Central America in 1:250,000 published by the Geographic Branch, Military Intelligence Division, General Staff, United States Army. The series consists of 31 sheets covering the area between 19° and 8° North latitude and 92° and 82° West longitude and three additional sheets of plans of Nicaraguan and Costa Rican cities and towns. Towns, villages, roads, and trails are very fully represented; relief is in bold hachuring.

Of the Transportation Map of the United States in 1:250,000 being compiled and printed by the U. S. Geological Survey for the Bureau of Public Roads of the Department of Agriculture (*THE AMERICAN YEAR BOOK*, 1934, p. 224; 1935, p. 265) all the sheets covering Florida, New Hampshire, Maine, Vermont, and Oregon were published during the past year (Iowa was completed in 1935). The sheets covering Washington, South Carolina, Rhode Island, Connecticut, Delaware, and Maryland are being printed. Compilation and drafting is almost completed for Arizona, Massachusetts, and New York.

Mention should also be made of two large maps of the United States in 1:2,500,000 published by the Federal Power Commission, one showing the service areas of the principal electric utility systems and the other

STATE GEOLOGICAL SURVEYS

the principal generating plants and electric transmission lines. A railroad map of the country in 1:2,500,000 has also been issued by the Chief of Engineers, U. S. Army. Railroad lines are shown in black, the names of the individual companies being lettered alongside.

STATE GEOLOGICAL SURVEYS

By ARTHUR BEVAN

SECRETARY, ASSOCIATION OF AMERICAN STATE GEOLOGISTS

GENERAL

Modern civilization depends upon the use of age-old mineral resources. As an aid to the development of their diverse mineral resources, 39 States had active geological surveys during 1936-1937. Available appropriations to the state geological surveys during this fiscal year were approximately \$978,914. This amount was increased about \$689,800 by the U. S. Geological Survey, the Works Progress Administration, and by state, county, and local organizations and individuals cooperating with state surveys, making about \$1,668,714, which was devoted to the investigation of state mineral resources. Approximately 95 geologists and 47 other technical workers were employed full time and 141 geologists and 48 other workers part time on 415 State Survey projects, including mineral resource, geologic, topographic, soil survey, stream-gaging, and other projects. Some 424 technical reports and maps were prepared for publication or published.

BASIC GEOLOGY*

Alabama.—Paleontology of Coastal Plain region.

Arkansas.—Published statistical summary of mineral production and directory of mineral producers, 1935.

California.—Manuscripts on hand: Geology of Newberry and Ord mountains; geology of San Nicolas and Santa Barbara Islands; geologic section of the Nopah Range, Inyo County. Field studies of geology

and mineral deposits of the Amboy quadrangle, San Bernardino County; also of Duncan Mills and Sebastopol quadrangles, Marin and Sonoma counties; also of Bodie mining district, Mono County; also of the Lucia quadrangle, Monterey County; geology of the Kaweah quadrangle, Tulare County; geology of the eastern front of the Sierra Nevada, Mono County; Tertiary geology of a part of northern California; mechanics of landslides.

Connecticut.—Report on petrology of Prospect porphyritic gneiss; geology of eastern Connecticut completed; bedrock geology of western highlands.

Florida.—Report on molluscan fauna of Alum Bluff group; study of well cuttings.

Georgia.—Geologic map of crystalline area completed; geology of crystalline area and geology of State.

Illinois.—Glenwood formation; Pennsylvanian stratigraphy, paleontology and paleobotany; subsurface studies of Paleozoic formations; Pleistocene system; geologic structures of Illinois basin; areal investigations and geologic mapping.

Indiana.—Glacial geology of southern part; brownstone hills; Mt. Carmel fault.

Iowa.—Pennsylvanian stratigraphy; glacial studies; general stratigraphy; geomorphology of north-eastern Iowa.

Kansas.—Reports completed on origin of Shoestring sands of Greenwood and Butler counties and geology of Rush and Logan counties; reports in progress on geology of Brown and Doniphan counties. Big Blue series; Cretaceous paleontology; cooperative regional study of Mis-

* To conserve space projects under each classification are listed without description. Details are available from the respective State Geologists. Completed projects are indicated by completed or report; all others are in progress.

Mississippi lime in central and western Kansas; fusulinids; ancient alluvium; Wellington formation in southern Kansas.

Louisiana.—Reports on geology of Catahoula and Concordia parishes and Cameron and Vermilion parishes. Report completed on Vicksburg ostracoda and in progress on Tertiary bryozoa. Completed geology of Plaquemines and St. Bernard parishes. Study of cap rock petrology; geology of Grant and La Salle, Winn and Caldwell, and Iberville and Ascension parishes.

Michigan.—Miscellaneous papers completed.

Minnesota.—Reports on geology of the Minneapolis-St. Paul Metropolitan area and on history of upper Mississippi River in late Wisconsin and post-glacial time; pre-Cambrian geology in northeast part; glacial geology of north part; Cambrian stratigraphy.

Mississippi.—Reports completed on Eocene sediments; also Tupelo tornado. Geology of Tishomingo State Park and of Tombigbee State Park.

Missouri.—Stratigraphy of southeast lowlands; Pennsylvania stratigraphy; subsurface geologic map of Jasper County and of Roubidoux sandstone; stratigraphy of Ordovician and Cambrian; determination of geological formations by insoluble residues; mapping surface geology along state highways; geophysical investigations; magnetometer mapping.

Montana.—Correlation of Cambrian stratigraphy; sponge spicules from Quadrant formation; physiography of Gravelly Range; earthquakes of 1935.

Nebraska.—Reports completed on water-bearing formations, ostracoda of Missouri series in State, and Pleistocene geology of State; reports in progress on correlation of Shawnee group in northern Mid-Continent region, correlation of Fremont well; also of deep wells of Omaha. Completed establishing precise elevations and correlation of Pennsylvanian formations in Platte and Weeping Water valleys. Insoluble residue and heavy mineral study of Permo-

Pennsylvanian; mapping subdivisions of Tertiary; Permo-Pennsylvanian in southeast part; elevations of formation contacts, flood plains, and terraces in Republican Valley; correlation of Permo-Pennsylvanian between Nebraska and adjoining states; subsurface study of older Paleozoic formations in deep wells of southeastern part.

New Mexico.—Report on some fusulinidae completed.

New York.—Completed geology of the Oswegatchie quadrangle; the name Catskill in geology; glacial geology of the Catskills; mining and quarry industries for 1930 to 1933; geology of the Catskill, Clyde and Sodus Bay, Wellsville, Randolph, Morrisville, Oriskany, Newburgh, and Coxsachie quadrangles.

North Carolina.—Report on rock and mineral guide of State completed; mineral industry in State, 1929-1935.

Ohio.—Report on geology of Highland County; reports in progress on geology of Lucas County, Holmes County, and of Monongahela series; local studies of Pennsylvanian system.

Oklahoma.—Revision of report on Muskogee-Porum district; report on stratigraphic studies on Arbuckle County and Simpson group, Arbuckle Mountains; stratigraphic studies in Tulsa and in Cimarron counties; also in northeastern part and areal mapping in Cleveland County (WPA project).

Pennsylvania.—Devonian stratigraphy; Oriskany sandstone; Silurian stratigraphy; metamorphics south of Chester Valley; igneous and metamorphics of South Mountain area, east of Schuylkill River; stratigraphy of Martinsburg shale.

South Dakota.—Report on stratigraphy of Pierre formation; also artesian conditions west of Missouri River. Structural geology of Harding County.

Texas.—Reports on geology of Texas, vols. 2 and 3; report completed on geology of Palo Pinto County; reports in progress on Vab oil field, Jackson group, and Catahoula and Oakville formations.

STATE GEOLOGICAL SURVEYS

Vermont.—Biennial report on mineral industries; structure and petrology of Green Mountains of northwestern part; mineral resources of State, 1935-1936.

Virginia.—Contributions to Virginia geology published; reports on Marion area and on Big-A Mountain area; manuscripts of Stony Man, Warrenton, and Natural Bridge quadrangles on hand; geology of Brunswick County; geology and mineral resources of Giles County; geology of Hot Springs district; geology of State; geology of Draper Mountain fenster; geology and mineral resources of Frederick County.

Washington.—Bibliography and index geology and mineral resources; geology of State; gneisses and schists of the Kettle Range, Ferry County; faunas of certain Mesozoic formations.

West Virginia.—Report on Greenbrier County.

Wyoming.—Report on summary of late Cretaceous and early Tertiary stratigraphy; report on Frontier-Niobrara contact in the Laramie basin completed; geology of an area north of Elk Mountain, Carbon County, completed; completed Tertiary history of the Laramie basin; Plicatoderbya, a new Permian brachiopod subgenus; proposed Twin Lakes reservoir, Sheridan County; geology of the LaPrele Dam, Converse County; geology of the Anchor Dam, Hot Springs County; and geology of the Lovell water well, Big Horn County; structure of the Medicine Bow mountains; geology of part of Red Desert, Sweetwater and Fremont counties; summary of late Tertiary stratigraphy; Sundance formation; stratigraphy of Jurassic and of Dakota and related formations; geology of Tertiary and older rocks, Absaroka and Owl Creek mountains.

OIL AND GAS

Arkansas.—List of oil and gas wells published; report on oil and gas possibilities in state; porosities of sandstones and shales in north part completed; oil shales of north part.

California.—Division of Oil and

Gas published annual report by quarterly chapters.

Illinois.—Reports on oil and gas developments in 1934; oil and gas possibilities of parts of Marion and Clay counties and central part of Illinois basin; report on western Lawrence County oil field; abstract reports oil and gas sessions, fourth mineral industries conference; carbon ratios of Illinois coal and gravity of Illinois oil; tests of oil sand cores; corrosion protection for oil well casing; repressuring plant methods; studies of water flooding; oil and gas development in Illinois in 1935; geology and oil and gas possibilities of Illinois basin.

Indiana.—Report on oil and gas developments in 1935; study of oil and gas well drillings; geology of Livermore oil pool.

Kansas.—Oil and gas fields of western Kansas completed; oil and gas fields of eastern Kansas.

Kentucky.—Geology of Livermore oil pool; research on secondary recovery of oil.

Louisiana.—Reports of the oil and gas fields for 1935 and previous years completed. Map of State showing oil, gas, and sulphur fields, salt domes, etc.

Michigan.—Brine and oil waste disposal in oil and gas fields (cooperative); preparation of samples, well logs, sections (cooperative); reports on natural gas reserves of the Michigan stray sand; geology of Crystal and of West Branch oil fields.

Missouri.—Mapping anticlinal structures in northwest part; recent drill logs in oil and gas areas.

Montana.—Natural gas in State.

Nebraska.—Logging deep oil and gas wells.

New Mexico.—Revised oil and gas map completed.

New York.—Study of recent natural gas developments completed.

Ohio.—Local structures; collection of oil and gas well logs.

Pennsylvania.—Structure mapping on deep sands; oil and gas resources of northern Butler and southern Venango counties; Bradford oil field.

Tennessee.—Oil and gas possibilities.

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Washington.—Report on possibilities of petroleum and natural gas completed.

West Virginia.—Report on deep well records; physical and chemical properties of natural gas by districts and geologic horizons.

COAL, COKE AND PEAT

Alabama.—Warrior coal field.

Illinois.—General coal report; reports completed on classification and selection of Illinois coals; the comparative position of Illinois coal; smokeless briquets; abstracts of papers at the third mineral industries conference and abstract reports of coal sessions fourth conference; report in progress on coal stripping possibilities in western and northern parts; proximate analyses and screen tests of coal mine screenings; constitution of Illinois coals; constitution of commercial fines; agglutination tests of Illinois coals; coal dust as a source of fusain for coking certain coals; use of Illinois peat in lightweight structural and refractory products; coal carbonization information available from industry; gas, coke, and by-product making properties of Illinois coals; physical properties of coal; composition and fusibility of ash from Illinois coals; proximate and ultimate analyses of coal; chemical nature of coal; petrology of mineral constituents of coal.

Iowa.—Report on Iowa coal studies; one unit coal studies completed.

Kansas.—Report in progress on coal fields of southeastern part.

Kentucky.—Report on geology of western Kentucky coal basin.

Montana.—Beneficiation of coals by flotation.

Oklahoma.—Mapping of coals in WPA mineral survey.

Pennsylvania.—Coal resources of northern edge of bituminous coal field.

METALLIC MINERALS

Alabama.—Brown ore of State.

Arizona.—Report on geology and ore deposits of Ajo and of Tombstone districts; revision of report on gold placer deposits.

Arkansas.—Report on geology of

bauxite region; manganese carbonates of north part.

California.—Mineral resources of Lassen, Modoc, and Los Angeles counties completed; gold mines of Calaveras County completed; gold resources of Plumas; mineral resources of Inyo, Mono, and Riverside counties; gold mining in El Dorado County; geology of Shasta copper district.

Idaho.—Reports on geology and ore deposits of eastern part of Yellow Pine district and application of the Diesel engine to small mines. Geology and ore deposits of the Edwardsburg and Thunder Mountain districts; gold-bearing gravels in the Florence district, Idaho County; geology of the Murray-Pritchard gold district, Shoshone County; Boise Basin district, Boise County; Atlanta-Rocky Bar mining districts in Elmore County; silver belt district in Coeur d'Alene mining region, Shasta County; flotation research, crushing and grinding studies, cyanidation of gold ores and gold precipitants.

Michigan.—Testing and sampling river sands for gold, etc.

Minnesota.—Iron ore deposits of northern part.

Missouri.—Barytes district of central part; pyrite and marcasite deposits of central Ozark region; magnetometer mapping lead and barytes districts southeast part; also investigation of method for location of pyrite deposits.

Montana.—Chromite deposits; gold deposits of Highland district; geology and ore deposits of Rochester district; geology and ore deposits of Hog Heaven mining district; Stillwater igneous complex and associated occurrences of nickel and platinum group metals; selective iridescent filming of sulphide minerals.

Nevada.—Economic geology of Silver City area.

New Mexico.—Report on the geology of Organ mountains; geology and ore deposits of Bayard area completed; ore deposits of San Miguel County. Geology and ore deposits of Virginia (Lordsburg) mining district, Hidalgo County; also of Lit-

STATE GEOLOGICAL SURVEYS

the Hatchet Mountains; also of Magdalena district.

North Carolina.—Report on gold deposits.

Oklahoma.—Investigations by WPA mineral survey.

Virginia.—Reports on lead and zinc deposits and on Piedmont gold belt.

Washington.—Report on the St. Helens mining district completed; inventory of mines, mining companies, and mineral occurrences.

NONMETALLIC MINERALS

Alabama.—Barite deposits completed; limestone and dolomite deposits.

Arkansas.—Report on geology of bauxite region; commercial minerals of Magnet Cove.

California.—Borate deposits of Kramer district, San Bernardino County; graphite deposits of Los Angeles County; sand deposits.

Connecticut.—Report on marbles and limestones.

Florida.—Clays; diatomaceous earth.

Illinois.—Reports completed on agricultural limestone distribution in 1935; clay products industry in Illinois in 1935; abstracts clay papers, also rock and rock products, at third mineral industries conference; abstract reports of clay sessions, also rock and rock products sessions, fourth mineral industries conference; completed electrical resistivity studies in Hardin County; utilization of fluorspar in pottery bodies. Decolorization of clay and silica; sand and clay for use in synthetic molding sand; petrology and physical properties of clay; beneficiation of fuller's earth; composition and base exchange capacity of the mineral beidellite; fluorspar deposits; Illinois gannister as a refractory; tripoli for pottery manufacture; sand and gravel resources; electrical resistivity survey of buried sand and gravel deposits; mineral resources of Illinois Valley.

Iowa.—Clays and shales, one unit completed; rock wool materials.

Kansas.—Report completed on rock wool resources.

Louisiana.—Report on production

of salt, sulphur, and limerock completed.

Michigan.—Road gravel surveys.

Mississippi.—Study of clays.

Missouri.—Clays in southeast lowland area; lower Mississippian formations suitable for rock wool; electric resistivity determinations of depth glacial drift, depth of southeast Missouri clay deposits and sink-hole residuum.

Montana.—Clay resources; Montana chromite as a refractory; beneficiation of Montana chromite.

New Mexico.—Report on Taos and Rio Arriba counties; nonmetallic mineral resources (exclusive of fuels).

North Carolina.—Investigations of kaolin clay, pyrophyllite, vermiculite, and olivine.

North Dakota.—Sodium sulphate deposits of northwestern part.

Ohio.—Work on clay, shale, sandstone, flint, limestone, dolomite, marl conglomerate; chemical analyses of dolomites and limestones.

Oklahoma.—Study of wool rock, lime and cement rocks, and clays; road and construction materials.

Pennsylvania.—Review of quarrying industry; mineral resources of Fayette, Somerset, part of Westmoreland, Lehigh and Northampton, southern York, southern Chesterfield, and northern Dauphin counties.

Tennessee.—Report on mineral resources of Tennessee; clays and shales.

Virginia.—Commercial granites; barite deposits; report on Ordovician bentonite beds in southwest part.

Washington.—Completed summary report on mineral production and resources; magnesite and dolomite deposits.

West Virginia.—Reports in progress on brines and refractory clays.

Wyoming.—Asbestos deposits.

GROUND-WATER RESOURCES

Arkansas.—List of water wells published; lists of lakes and springs completed.

Florida.—Report on Lake Okechobee area; general projects.

Georgia.—Collection of well logs.

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Indiana.—Observation water wells on state lands.

Iowa.—Certain projects.

Kansas.—Report on Rawlins and Decatur counties completed.

Kentucky.—Deep wells for schools, municipalities, etc.

Michigan.—Cooperative work; township maps.

Minnesota.—Revision of report on water supply of northeast part.

Missouri.—General problems; 300 wells examined, including analyses.

Montana.—Continuation of 6-year program.

Nebraska.—Cooperative reports in progress on Keith County and south-central Nebraska; completed periodic measurements of water table in 300 wells.

New Jersey.—Compilation of well records; advising well drillers.

North Carolina.—Deep wells.

North Dakota.—Report on artesian waters; artesian well recessions in Lamoure and Edgely quadrangles; water resources of Red River, Devils Lake and Souris River, James River, and Missouri River basins; municipal water supply survey.

Ohio.—Well logs and data on water table.

Oklahoma.—Data on rural wells; electrical resistivity investigations; recommendations to municipalities and for WPA drought relief wells; investigation of irrigation possibilities of Panhandle counties.

Pennsylvania.—Report on north-western part; report in progress on northeastern part; completion of reconnaissance of south-central part.

South Dakota.—Gaging lake levels for ground-water studies.

Virginia.—Report on Shenandoah Valley.

Wyoming.—Numerous problems.

GEOLOGIC AND TOPOGRAPHIC MAPS

California.—State geologic map.

Georgia.—Geologic map of crystalline area completed; geologic map Coastal Plain area.

Idaho.—Topographic map of one quadrangle.

Illinois.—Topographic maps com-

pleted on 3 quadrangles and in progress on 38 more.

Iowa.—Geologic map of State completed.

Kansas.—Geologic map of State completed.

Louisiana.—Planimetric maps of 11 quadrangles completed; of 35 others in progress.

Maryland.—Topographic map of Prince Georges County completed; of Carroll and Garrett counties in progress.

Michigan.—State geologic map in press.

Mississippi.—State geologic map.

Missouri.—State geologic map; about 65 quadrangles and strip maps in progress or completed; base map and magnetic maps.

Montana.—State geologic map.

Nebraska.—State geologic map; land use state map for State Planning Board; completed areal map along the Missouri; Republican Valley area being mapped aerially by Soil Conservation Service; 3 revised atlas sheets.

New Jersey.—Revision of topographic maps.

Pennsylvania.—Topographic maps of two quadrangles.

Tennessee.—New base maps of 23 counties and revised base maps of 14 counties, in cooperation with Tennessee Highway Department, WPA and TVA; geologic map of Gainesboro quadrangle; mineral resources map; aeronautical map of Tennessee in cooperation with Tennessee Division of Aeronautics in press.

Texas.—Structural map completed.

Vermont.—Topographic maps of several quadrangles completed.

Virginia.—Topographic maps of 13 quadrangles published, including three by PWA; completed seven others; in progress on four others.

Washington.—Preliminary geologic map of State completed; report on the present status of topographic mapping completed; mapping of Yakima district and four quadrangles.

West Virginia.—Topographic map of Greenbrier County completed; geologic maps of Greenbrier, Ohio, Brooke, and Hancock counties.

RECLAMATION AND IRRIGATION

Wisconsin.—Topographic maps of 2 quadrangles completed.

Wyoming.—Geologic maps of Carbon and Goshen counties; geologic map of Natrona County completed.

MISCELLANEOUS

Numerous miscellaneous projects include statistical summaries of mineral production, economic and mineral resources surveys, also cooperative projects with State Planning Boards and various WPA projects; report on magnetic investigations in southwest part by Alabama; study of

caverns, drafting set of county maps and publication of elevations (9 volumes) by Arkansas; bibliography of geology and mineral resources, 1931-1935, and geographic card index and minerals of state by California; distribution of school museum sets of rocks and minerals by Georgia and Kentucky; geographic atlas of State in cooperation with Geographic Society of Chicago by Illinois; control of levels of inland lakes by Michigan; directory of mining properties by Montana; report on outline of mineral resources by Virginia, and study of road slips by West Virginia.

RECLAMATION AND IRRIGATION

By R. F. WALTER

ACTING COMMISSIONER, U. S. BUREAU OF RECLAMATION

IRRIGATION AREA AND PROJECTS

The Bureau of Reclamation was organized as a bureau of the Department of the Interior under the Reclamation Act of June 17, 1902. It is engaged in the investigation, construction and operation of 47 irrigation projects in 17 arid and semiarid States of the far West. Twenty-seven projects, comprising an irrigated area of about 1,604,000 acres, are under construction or operation, and the major works aid in serving an additional 1,285,000 acres under private canals purchasing stored water from the Government reservoirs, making a total irrigated area of nearly 3,000,000 acres. The funds for this work have come from repayments by the water users, from oil leasing and other mineral operations, from the sale of public lands, and by allotments and direct appropriations. The money expended is returned to the fund by graduated payments of settlers. The Bureau has built 18,730 miles of canals, ditches, and drains (including 178,200 canal structures).

POWER CONSTRUCTION

There have been constructed 109 storage and diversion dams with an aggregate volume of 30,434,000 cubic

yards, including the Boulder Dam (727 feet high), Arizona-Nevada, on the Colorado River, the highest dam in the world; Owyhee Dam (405 feet high), Oregon, on the Owyhee River; Arrowrock Dam (354 feet high), Idaho, on the Boise River, and the Elephant Butte Dam (306 feet high), New Mexico, on the Rio Grande. The Bureau has built 283 tunnels, 1,728 miles of road, 156 miles of railroad, 4,282 miles of telephone line, 43 power plants, and 3,878 miles of transmission lines. The construction cost to June 30, 1936 was \$262,000,000 (exclusive of \$112,000,000 for Boulder Canyon). This work has involved the excavation of 402,320,000 cubic yards of materials, and the Bureau has used 12,100,000 barrels of cement. On Sept. 11, 1936, President Roosevelt started the operation of the first generator at the Boulder Dam power house on the Colorado River, the turbines of which will have an ultimate rated capacity of 1,835,000 hp.

FARMS AND PUBLIC LANDS

Nearly 840,000 persons are living on the 46,500 farms irrigated by the Bureau, and in the project towns and cities. Of the 3,000,000 acres above referred to, 2,860,000 acres were harvested in 1935 producing crops

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worth more than \$106,000,000 or an average of \$37.30 per acre. Information in regard to farms available for settlement may be obtained by addressing the Commissioner, Bureau of Reclamation, Department of the Interior, Washington, D. C.

Public land farm units on the several projects are opened for settlement from time to time as canals are extended to make irrigation water available. Under present law, soldiers and sailors of all wars have a preference right of 90 days to enter these farms. The Bureau issues settlement and other booklets. An annual report is also issued, and other publications from time to time, relating to various phases of the work.

ENGINEERING INFORMATION

An engineering library of about 7,000 manuscripts, printed volumes and pamphlets on the subject of irrigation is maintained in the Washington office of the Bureau. This library contains descriptions of the construction and operation of the projects, with numerous photographs and maps, plans, specifications, cost data and results of original experimental investigations, and is available for consultation by those interested. The Bureau maintains also a photographic file of about 75,000 negatives of scenes on the projects from the beginning of construction through the period of settlement and development, and also has available for distribution, 12 motion picture films (16 and 35 mm.) relating to reclamation.

ACREAGE AND FINANCIAL STATISTICS

The area irrigated in 1935 with water from Government works was 2,935,616 acres, an increase of 98,411 acres over that for 1934. The area cropped was 2,861,136 acres, an increase of 104,438 acres. The total value of crops was \$106,781,294, an increase of \$5,837,580 compared with 1934 and of \$22,589,561 compared with 1933. During the period 1906, when water was first available, and to and including 1935, the cumulative value of crops grown on land

irrigated from Government works amounted to \$2,177,965,009.

Construction payments in cash and credits from power and other sources received during the fiscal year 1936 were \$399,372.09, a decrease of \$275,200 compared with the previous year. Payments for operation and maintenance were \$996,115.12, a decrease from the previous year of \$82,780.92.

Total payments amounted to \$1,395,487.21 compared with \$1,753,468.13 in 1935, a decrease of \$357,980.92. Income to the reclamation fund from all sources during the fiscal year was \$4,838,211.47, or \$322,200.12 more than for the previous year. The operation and maintenance expense for the year was \$1,204,053.44, an increase over the previous year of \$72,005.78. Excess of operation and maintenance cost over receipts for the year amounted to \$207,938.32, compared with an excess of cost over receipts of \$53,151.62 for the previous year.

Construction work was carried on with funds provided under the National Industrial Recovery and Emergency Relief acts. Operation and maintenance of the irrigation, drainage, and power systems was carried on with direct appropriations from the reclamation fund, money advanced by the water users organizations, and revenues from power operations.

The Act of June 13, 1935 extended the provisions of previous acts granting temporary relief to water users on irrigation projects, and construction charges coming due for the year 1935 were not required to be paid. This explains the reason for the small payments as given under this heading.

RECLAMATION PRODUCTION AND GENERAL BUSINESS

Data collected on a number of reclamation projects during October, 1934 in a special study by the Bureau of Reclamation give a tangible basis for estimating the effect of reclamation production on general business. Records were obtained of the expenditures for purchases outside of the local trade territory by representative farmers, covering a

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period of 7 to 10 years. They show that 75 to 80 per cent of the farm income was thus spent on the purchase of commodities produced in the industrial sections of the United States; in other words, only about one-fourth of the farm production income was used for irrigation operation, tax payments, labor and local supplies, while three-fourths went

into the general industrial and trade stream. Applying this result to the mean production of all projects where the Bureau of Reclamation is delivering water, including Warren Act projects taken at \$100,000,000 per year on the average, it may be concluded that the Bureau is responsible for sending about \$75,000,000 each year into the industrial market.

PUBLIC LANDS

BY FRED W. JOHNSON

COMMISSIONER OF THE GENERAL LAND OFFICE

PUBLIC LAND DISPOSALS

It would appear that the disposal of the public land follows much the same course as transactions relating to business generally. During periods of domestic depression public land of the Government, like that belonging to private owners, does not seem to be in demand, while during periods of great commercial and business activity the demand for public land keeps pace with the volume of business transacted.¹ The statistical peaks

in public land disposals were made on the speculative eves of the major financial crises of 1819, 1837, 1857, 1873, 1893 and 1930. The national debt was extinguished in 1835 by the public land revenues and the public land sales reached an all time high of 20,074,871 acres in 1836.

The course of the public land business during the past 12 fiscal years is shown by the following table of acres of new entries and applications:

NEW ENTRIES AND APPLICATIONS

Fiscal Year	Homesteads (original)	Deserts (original)	Timber & Stone Applications	Mineral Applications	State Selections	Railroad Selections	All Others	Total	Pending Entries on June 30	Vacant Public Land on June 30 (U. S. proper)
1925	3,188,686	61,889	26,889	49,827	184,908	189,092	73,500	3,774,791	33,018,910	.....
1926	3,001,403	47,171	16,614	67,332	102,110	86,489	86,599	3,407,718	28,129,876	196,056,747
1927	3,359,182	35,534	20,361	35,791	176,049	14,092	98,437	3,739,446	28,028,292	193,737,588
1928	3,464,775	40,447	15,187	91,329	95,254	106,454	73,617	3,887,063	23,282,994	193,847,240
1929	4,311,591	28,555	13,054	27,377	238,023	15,242	91,819	4,725,661	21,347,505	189,854,407
1930	4,920,842	33,355	11,878	30,133	281,443	78,363	155,886	5,511,900	22,533,574	178,979,446
1931	4,924,046	32,826	5,945	19,776	84,684	77,539	174,210	5,319,026	24,241,042	177,101,551
1932	4,049,854	15,598	3,213	13,484	412,084	60,844	53,513	4,608,590	24,164,842	173,318,246
1933	2,714,029	10,111	2,050	4,900	369,973	11,590	31,695	3,144,348	23,208,074	172,084,580
1934	2,862,143	6,456	1,420	4,884	662,689	43,146	55,491	3,636,229	24,040,779	165,695,479
1935	1,193,313	5,082	1,642	5,235	62,575	758	516,634	1,785,239	19,666,693	.....
1936	383,656	3,004	1,131	4,647	37,261	440	22,634	453,091	16,862,271	.....

The high figure in "All others" for 1935 is due to an application for 166,323 acres for state parks in California, and to applications in Arizona to select 329,666 acres in lieu of lands relinquished within Indian reservations. The only large item in "All others" for 1936 is 14,776 acres of private land claims in New Mexico.

AGRICULTURAL LAND POLICY

The drop of entries in 1935 and 1936 is due to the first great change

in agricultural land policy since the homestead act of 1863. Heretofore, according to the decisions of the

¹ Report of Public Lands Commission, 1904.

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courts, the Government was not authorized to control the grazing of public land. The Taylor Grazing Act of June 28, 1934, directed the Secretary of the Interior to control grazing on the public land. The amended act provides for the creation of 142,000,000 acres of grazing districts, for individual grazing leases on lands outside of the districts, for sale of isolated tracts of public land, for exchanges of land in furtherance of grazing control, and for homestead entries under certain conditions. The President on Nov. 26, 1934, and Feb. 5, 1935, withdrew all public land in the United States proper from agricultural entry, for the development of grazing control, for classification, and in aid of a new land policy. The withdrawn land, however, is subject to the entries prescribed by the Taylor Grazing Act, to location, patenting and leasing under the mineral laws, to entry for timber and stone, and homestead entry is continued within reclamation projects and National Forests. The areas created into grazing districts are administered by the newly organized Division of Grazing of the Department of the Interior. This Division and the General Land Office work in close collaboration on lands within and without the grazing districts. Two great fundamental changes have occurred between 1863 and 1934. First, while there may be some exceptions, it may be said that as a general rule, the remaining public lands are desirable only for grazing. Second, in the early days of settlement a family would settle on the land, produce almost all its own requirements, and earn in actual money a very small income, which would be expended on articles which the farm could not produce. To live rather than to earn or produce for the use of others was the dominating purpose. Now all this is changed. The modern view is that unless the income received from the products of the farm can approximate the money that would be earned from similar energies else-

where, there is no inducement to settle on the land.*

HOMESTEAD ACREAGE

The final entries (proofs that claimant has complied with the law and is now entitled to patent) descended in 1933 to 946,664 acres of which 908,329 acres were homesteads, the lowest level since 1827 and 1862. The final entries mounted in 1936 to 1,937,526 acres of which 1,872,086 acres were homesteads. In 1936 there were issued 8,238 patents for 2,216,684 acres, of which 5,310 were homestead patents for 1,867,137 acres. There are now 41,182 pending and unperfected entries for 16,862,271 acres, of which 35,140 are homestead entries for 12,413,137 acres. Two-thirds of this homestead acreage lies in the Rocky Mountain States of Montana, Wyoming, Colorado and New Mexico, which has been the main homestead field for the past 25 years. Applications under the Taylor Grazing Act to exchange state land for unentered land make up the greater part of the 4,449,134 acres of non-homestead entries pending. It would seem theoretically that 2,334,266 acres of allowed homestead entries had been relinquished or canceled for failure to comply with the law in 1936. It is known that many relinquished their homestead entries and applied for the same land under grazing permit or lease. On an acreage basis 87 per cent of the land entries have been under the homestead laws, and formerly 58 per cent of the homesteads were carried to patent, but since the 640-acre stock-raising homestead act of 1916 the patents have fallen to 50 per cent of the original entries.

MINERAL LEASES

The mineral leases are outstanding as follows: 968 for oil and gas, embracing 362,342 acres; 460 for coal, 76,076 acres; and 23 for sodium, potash, phosphate and oil shale, 34,160 acres. There are outstanding 7,359 permits to prospect for oil and gas, 11,463,028 acres; 234 permits to pros-

* Annual report for 1928 of the Department of Public Lands, Queensland, Australia.

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pect for coal, 150,133 acres; and 148 permits to prospect for sodium, potash and sulphur, 239,278 acres.

The receipts for 1936 were \$5,074,-314. Mineral leases furnished \$4, 419,-923 of which 53 per cent came from California and 24 per cent from Wyoming. The \$5,074,314 was apportioned: \$2,489,538 to the reclamation fund, \$1,950,906 to States and counties, and \$633,870 to the general fund of the U. S. Treasury. Additional were \$120,086 receipts from Indian lands, reverting solely to the various Indian tribes. The expenditures for all General Land Office work were \$1,527,797.

LAND SURVEYS

The General Land Office was charged by Congress on April 25, 1812, with the survey and disposal of the public land. Its Cadastral Engineering Service performs practically all surveys for title purposes within the original public land States for the various Federal Bureaus and Departments. It is thus one of the great governmental surveying services with a supervisor of surveys at Denver, an associate supervisor at Washington, and 12 public survey offices with the local survey records for public use. In the United States proper there remain unsurveyed 54,000,000 acres in the National Forests and 128,000,000 acres outside of the Forests, and at the present rate 32 years would be required to complete these surveys. Nearly all of Alaska is still unsurveyed. During the fiscal year of 1936 there was expended \$741,718. Work was carried on by 212 separate groups in 31 States and Alaska, and included work for 11 other Government bureaus. Such work as could be related to a linear and area basis amounted to 15,754 miles of survey lines embracing 2,341,000 acres surveyed or resurveyed. There are now no contract surveys, except that mining claims are surveyed for patent by private surveyors commissioned as U. S. mineral surveyors. The maps of the United States and of the State of New Mexico were revised for re-

printing and a new map of Alaska was issued.

GENERAL LAND OFFICE

The General Land Office is the legal, title and record bureau of the public domain. Its 4,300 tract books contain the base title record and status of every 40-acre tract in the public domain—76 per cent of the United States proper. They are (1934) the index to 8,772,793 original record files. Additional are 7,392,345 files of letters, withdrawals and miscellaneous actions, and 11,880,780 index cards. Copies of the 6,056,146 patents are bound in 9,400 volumes. The base of the survey records is 6,009 volumes of field notes and approximately 100,000 township plats.

The work of the General Land Office is interrelated with the following "public domain bureaus" which were created from time to time as more intensive use was made of the public land and resources: Geological Survey, Federal Power Commission, National Forest Service, National Park Service, Bureau of Reclamation, Bureau of Indian Affairs, Biological Survey and Division of Grazing. The General Land Office is

	Acres	Purchase Price
State cessions after Revolutionary War	266,427,520	\$ 6,200,000
Louisiana Purchase (1803).....	529,911,080	27,267,622
Oregon Territory (by exploration).....	183,386,240	.....
Purchased from Spain (1819).....	.....	6,489,768
Florida.....	37,546,240	.....
West of Mississippi River.....	8,598,400	.....
Mexican cession (1848).....	338,680,960	15,000,000
Purchased from Texas (1850)*.....	78,892,800	16,000,000
Gadsden Purchase (1853).....	18,988,800	10,000,000
Total.....	1,462,432,640	80,957,390
Less water area.....	20,232,320	.....
Total.....	1,442,200,320	.....
Alaska Purchase (1867).....	378,165,760	7,200,000

* Land claimed by Texas between its present west boundary and the Rio Grande.

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the bureau which makes the land surveys, keeps the base title records, promulgates the withdrawal orders, decides all questions of public land and mineral rights, and issues patents and leases and grants rights of way, while the other bureaus are technical and administrative agencies concentrating on their specialities.

The public domain or original public land includes all the States west of the Ohio and Mississippi Rivers except Texas, and includes in addition the States of Mississippi, Alabama and Florida, and the Territory of Alaska. The public domain, as acquired is shown in the table on preceding page.

PUBLIC UTILITIES

BY JOHN BAUER

DIRECTOR, AMERICAN PUBLIC UTILITIES BUREAU

GENERAL

Public utility developments in 1936 proceeded along lines established during the past few years. No particularly new tendencies appeared. There has been, however, progress from the public standpoint in the field of state regulation, in municipal and Federal activities, and in utility organization, finance and management.

The depression promptly produced demands for rate reductions throughout the country. Because of the unwieldy structure of the state systems of rate regulation, the pressure of reducing rates with the shift in economic conditions, especially the decline in purchasing power among the masses of people, produced slow results. The basic trouble with the prevailing system, as set forth in earlier surveys in the *THE AMERICAN YEAR BOOK*, is the lag of adjustment with changing conditions. Neither during falling nor rising prices and costs can rates be promptly reduced or increased properly. Neither during surging prosperity nor dire depression can appropriate adjustments be made without long lag.

VALUATION OBSTACLE

The prevailing system of state rate regulation has continued under criticism and there is wide realization that the standard methods are largely ineffective and lead to default of public control. Because of the so-called "fair value" rule, regular rate procedure is extremely cumbersome, costly and long-drawn-out. It depends upon

appraisal of properties, based upon unclear principles and facts. It involves sharp conflict of interest between public and private rights and consequently promotes litigation which, in many noted instances, was not concluded before basic conditions had changed and a new cycle of litigation was started.

While the exact content of fair value has never been precisely determined, it has been developed by the courts and consists primarily of the so-called reproduction costs, less depreciation, of the properties used in public service. There must be proper allowance for labor, materials and construction overheads in accordance with prevailing prices and costs. The amount is thus particularly variable with respect to price and cost levels: the elements included depend primarily upon expert testimony, not exact facts, and upon the economic views of commissioners and judges.

Every important attempt for rate adjustment by standard procedure involves re-valuation of the properties. This is true especially if substantial shifts have occurred in prices, technological status, and service requirements. The job of re-appraisal is enormous, usually prohibitive in a large utility. The public side is usually left without adequate preparation and presentation, due to the fact that no public body is technically and financially equipped to make the necessary preparation.

NEGOTIATION AND AGREEMENT

Because of unsatisfactory experience, the state commissions have naturally avoided formal rate cases as much as possible and have sought other means of obtaining rate reductions during the depression. Through negotiation, they have brought appeal and pressure upon the companies. In relatively few instances have formal rate cases been carried to effective realization, though in important instances, especially telephones, the reductions thus obtained have been significant and indicate what might be done by intelligent and resolute commissions, notwithstanding the difficulties of formal procedure.

Negotiation has the handicap of its success depending upon company willingness to accept reductions. While, of course, utility managements are conscious of public criticism and cannot entirely avoid the force of facts, nevertheless they naturally resist granting reductions unless they are practically compelled to accept. In most instances of agreement the reasonable presumption is that the rate cuts represent only partially the reductions to which the public is entitled. The method, at best, is a poor substitute for effective standards and procedure of systematic public control. Its moderate success depends upon lively threat of formal proceeding and of other alternative action, especially the establishment of public ownership and operation.

RATE REDUCTIONS

Notwithstanding the difficulties of regulation and negotiation, there has been substantial downward revision of rates throughout the country. This started with the depression and, because of lag, was accelerated in 1936. While the exact amounts of reduction throughout the country cannot be stated with satisfactory accuracy, the accomplishments in individual States as reported by the commissions are indicative of the country-wide trends.

According to a tabulation prepared by the Michigan Public Utilities Commission for this review, the total utility rate reductions ordered for the calendar year 1935 amounted to \$718,-

000 for the entire State, compared with \$6,431,000 for the first ten months of 1936. This latter result includes numerous smaller companies, but especially \$1,581,000 for Consumers Power Company, \$1,500,000 for Michigan Bell Telephone Company, and \$1,711,000 for Detroit Edison Company.

Among the foremost commissions has been that of Wisconsin, notable as among the first commissions created, and as one of the most progressive from the public standpoint. In March, 1936, it ordered a reduction of \$863,000 a year for the Wisconsin Telephone Company. This followed a formal rate proceeding and is under appeal before the courts. The commission has extended the promotional type of electric rates which is said to be in effect now in 90% of the State's urban communities.

The Alabama Commission reports electric rate reductions of \$323,000; also \$10,665 in gas and water charges. The Ohio Commission brought about total utility decreases of \$2,876,000. The District of Columbia Commission reports telephone decreases of \$252,000. The South Carolina Commission estimates its total 1936 reductions at \$821,000. The course of rates has been distinctly downward.

NEED OF FIXED RATE BASE

In the struggle for rate revision there has come an increasing realization of the need of a "fixed" rate base as against the "fair value" base which now controls in formal rate cases. That regulation cannot be made effective upon a variable rate base, which must be re-determined with every substantial shift of conditions, has become widely understood. There is, however, the difficulty of establishing a fixed base which can be maintained systematically through accounting and engineering procedure. This might be achieved through comprehensive legislation, and then by reasonable initial valuation of existing properties and with subsequent additions of actual investment under systematic accounting control. But there is doubt as to the constitutionality of such legislation, consequently efforts have been

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made to attain the same results through negotiation and practical pressure for agreement by utilities.

THE WASHINGTON PLAN

Along such readjustment of regulatory standards is the so-called Washington Plan. Partly through legislation, but largely through pressure, the District of Columbia Commission has established a fixed rate base upon which a sliding scale system of rate revision has been built. It has brought about striking rate reductions and increase in utilization. Its experience indicates the possibilities of effective regulation if suitable bases and methods are used and if there is an intelligent and resolute commission.

The sliding scale system has received prominence during 1936 chiefly due to avowal by Governor Earle of Pennsylvania. He has insisted upon rate revision in the State and has become exasperated by the unwieldy regulatory processes. He has declared for the sliding scale plan, but what he has probably not realized is the underlying essential to success. This is a fixed rate base properly determined and maintained, with suitable administrative machinery for periodical rate adjustments. With a fixed rate base, so as to avoid repeated valuations, regulation could be made effective without the sliding scale adjunct.

Before the sliding scale can be satisfactorily introduced the valuation tangle must first be unraveled. This may be achieved in individual instances through agreement, but upon state-wide scale it requires comprehensive legislation to meet the constitutional question and utility opposition. Here is the impasse which will continue until positive legislation is enacted and properly defended before the courts.

The most noteworthy municipal effort to establish the Washington plan through a fixed rate base has been that of New York City before the New York Commission in the proposed merger of gas and electric companies owned and controlled by the Consolidated Edison Company. The

city, first of all, has opposed a combination of gas and electric properties within the same corporate and financial structure. It held that electricity is technologically a progressive utility, and sought to prevent gas, which it held to be regressive, from becoming a burden upon the electric service. As to the electric properties, it favored city-wide unification, provided that this would be predicated upon proper organization and means of public control. As a condition to consolidation, it urged the establishment of a fixed rate base and provisions for systematic rate revisions, including a sliding scale arrangement. It objected, however, to any merger without prior acceptance of these basic conditions necessary for effective future control.

LIMITATIONS TO REGULATION

Among informed public opinion, there is increasing feeling that regulation under any circumstances is bound to be unsatisfactory when public services have once been turned over to private business for organization and management on a private profit basis. There is bound to be underlying conflict between public and private interest. The huge investments and returns are certain to align against public needs and systematic realization of public objectives. Where there is fundamental public interest, reasonable organization requires, in the long run, public ownership and operation. This eliminates the underlying conflict of interest which inevitably permeates private organization in spite of any regulatory provisions.

There is much to be said in favor of this view. At the same time, the public utilities of the country are generally organized on a private basis and their conversion to public ownership would involve enormous difficulties. As a practical matter, the public interest will require both improvement in regulation and extension of public ownership. And both efforts will encounter the same obstacles of entrenched legal, financial, technological, and political position, as well as uninformed public opinion.

PUBLIC UTILITIES

The utilities, naturally, wish to be left alone and seek to make regulatory or protective of themselves.

What is necessary for the public is, first, clear seeing of conditions and then bringing about proper shifts both in regulation and in extension of public ownership. The desirability of such extension in itself depends upon sound organization. Mere institution of public ownership has no public advantage unless it is predicated upon proper underlying valuations and upon proper financing and management.

There has been, decidedly, increasing focus upon public interest, as shown in rate reductions, in efforts to improve regulation, and in advance of public ownership. That these forces will continue seems most likely. How fast they will work out in relation to each other is impossible of prediction.

UTILITY REFINANCING

Among the significant developments in the utilities has been extensive refinancing at exceptionally low rates of interest. This movement was well under way in 1935, but greatly accelerated in 1936. Under prevailing money markets, a well situated utility has been able to issue its bonds at 3.5% or less, about the lowest money rate in the history of the country. This condition has brought about extensive refunding, but as yet there have been few issues to finance new construction. The growing service demands with the passing of the depression have been met almost altogether through existing facilities. With further business recovery there will doubtless be much new financing for property additions, extensions, improvements and replacements of obsolete plant.

The most striking refunding has occurred in the telephone industry. The important issues have included \$45,000,000 by the Illinois Bell, \$30,000,000 by the Pacific Telephone and Telegraph Company, and \$45,000,000 by the Southwestern Bell. In addition, the American Telephone and Telegraph Company issued its own debentures amounting to \$160,000,000.

All these bonds were sold at yields of 3.4% and less to investors. These percentages contrast sharply with the 8% commonly claimed as necessary in rate cases.

URBAN TRANSPORTATION SHIFTS

Among municipal utilities, the most significant technological developments have occurred in transportation. They have brought to the forefront motor bus operation as against electric street railways which had been the means of mass transportation in all cities of the country.

For 25 years automotive competition has pressed upon the street railways, and in recent years has forced their abandonment in many of the smaller cities. The past year has brought wide recognition of the advantages of buses over street cars in urban transportation. In most cities motor bus operation advanced substantially, compared with street railways. In Manhattan, New York City, there was practically complete abandonment of street railway operation in 1936, and full substitution of modern buses. The shift has produced great increase in riding, and reduction in street congestion. In Detroit the municipally owned transportation system added greatly to its bus system, which has included especially the small type of bus for frequent service. An order of 500 of such buses, at an average cost of less than \$3,000 per bus, has been the outstanding feature.

In Pittsburgh the transportation system has been kept predominantly street railway because of the monopoly held by the Pittsburgh Railways Company. While this company has had a bus subsidiary since 1925, the latter has been operated at a 25¢ fare and was intended not to enter the field of mass transportation, but primarily to protect the street railways. This policy was abandoned the past year, and the service has been made available to the public at large. Fares have been reduced effectively to 10¢ (at 20 tickets for \$2). The transportation management, moreover, has promised important service improvements and has indicated willingness to

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extend bus operation according to public needs and desires.

In its controversy with the Pittsburgh Railways Company the City of Pittsburgh has sought a comprehensive settlement for a progressive transportation program and for systematic conversion to buses. Stress has been placed especially upon a fixed rate base at a reasonable sum, so as to eliminate future conflicts of interest in making rate revisions and in meeting other public needs. A fixed rate base stands out as prerequisite to satisfactory dealing with any utility, for it furnishes a definite measure of relative public and private rights.

FEDERAL UTILITY ACTIVITIES

In the Federal field, the principal agencies concerned with public utilities are the Federal Communications Commission (FCC), the Rural Electrification Administration (REA), the Tennessee Valley Authority (TVA), the Securities and Exchange Commission (SEC), the Federal Power Commission (FPC), and the Public Works Administration (PWA). There is, of course, the Interstate Commerce Commission, concerned principally with railroads which are not included in this survey.

The Federal Communications Commission in 1935 started a comprehensive investigation of telephone companies, especially the American Telephone and Telegraph, or Bell System. This has been continued through 1936 and will probably extend through 1937. During the early months of 1936 public hearings were held, and technical reports were presented with respect to various aspects of organization, finance and management.

For its investigation the Commission has employed large engineering, accounting, statistical and legal staffs. Its inquiry has covered not only the general organization of the Bell System but also the more detailed relationship of the various companies. At the top is the American Telephone and Telegraph Company, which controls the operating companies throughout the country, also the Western

Electric Company which supplies practically all plant and material items to its operating affiliates, and in addition purports to furnish direct advisory service to the subsidiaries and operates outright the long distance toll lines, especially those which extend beyond the territories of the individual operating companies.

While the Commission has jurisdiction only over interstate telephone activities, it is probing into basic organization, finance, costs and charges, and will make the information available for state regulatory bodies and for municipalities interested in adjustment of telephone rates. With this object, it has inquired particularly into the costs and prices of the Western Electric Company which determines primarily the payments made for materials and plant items used in construction and maintenance of intra-state properties. Furthermore, its prices are used by the operating companies in support of their valuations placed before state commissions in rate cases.

RURAL ELECTRIFICATION ADMINISTRATION

This agency was originally established to furnish emergency employment as well as to stimulate development and extension of rural electrification, and received an appropriation of \$100,000,000. In May, 1936, the Administration was re-established by act of Congress upon a long-term program of ten years. The provisions follow closely the policy outlined by the REA during its first year of operation.

Under the 1936 act, Congress may appropriate \$40,000,000 per year after the first year, but for the first year \$50,000,000 is available through the Reconstruction Finance Corporation. Of the annual appropriations, half is to be allocated among the states in proportion to the number of unelectrified farms; the other half is to be used at the discretion of the Administrator, but not over 10% in any one State.

The funds may be used to make loans for the construction of generating stations, transmission and distribu-

tion lines, and for acquisition of appliances and equipment. Loans may be extended to utility companies, municipalities, power districts, and cooperative associations, but preference must be given to public and non-profit agencies. The interest rate is fixed annually at the average rate payable by the government on obligations of ten years' or longer maturity, issued during the previous fiscal year. The act authorizes re-payment periods of 25 years, but the policy of 20-year payments has been generally adopted.

As of Nov. 1, 1936, the approved project allotments totaled \$35,728,000. They provide for construction of 32,881 miles of line, serving 118,490 customers, in 34 States. Eighty per cent have gone to cooperatives. The REA has stimulated the electric industry to proceed at a record-breaking rate of activity in rural areas. Not only are thousands of farms newly connected each month, but long-standing terms of line extensions and charges for electricity are drastically and widely reduced. The Administration is actively engaged in stimulating the use of electricity for wider range of farm purposes.

THE TENNESSEE VALLEY AUTHORITY

Functions and Purposes.—This is the principal agency of the Federal Government in direct construction and operation of utility properties which furnish service for general public use. It has proceeded under the act of Congress to construct dams, hydroelectric plants, transmission lines, substations, and other facilities to effect the sale of power produced. The project, however, was undertaken not only to develop cheap water power, but also for flood control, improvement of navigation, and especially for bringing about wide regional improvements incident to the extensive governmental undertaking.

Norris Dam and Muscle Shoals.—During 1936 the Norris Dam was brought to practical completion and operation of the electric plant was started. Progress in the electric program is indicated by various figures. For the fiscal year 1934-1935, the total

generation amounted to 122,000,000 kilowatt hours, compared with 467,000,000 kilowatt hours during 1935-1936, an increase of 281%. Gross generation for June, 1936, marked an increase of 365% over the same month in 1935. The maximum 24-hour output of the Muscle Shoals plant went up from 600,000 kilowatt hours in 1935 to 3,500,000 kilowatt hours in 1936. Gross revenues increased from \$598,000 in 1935 to \$1,170,000 in 1936.

Electrical Consumption.—The Authority delivers power wholesale to municipal plants, cooperatives, or to private utilities, on such a basis that the advantages of low-cost will be conveyed to actual users. Its influence on rates and growth of utilization has been strikingly effective. Within 22 months after so-called TVA rates went into effect, the total residential consumption of electricity in Tupelo, Miss., increased 267%. In Athens, Ala., after 18 months, there was an increase of 272%, and in the same period, in two county-wide associations—Alcorn and Pontotoc Counties, Mississippi,—the increase was 220% and 293% respectively. Low rates and assistance in financing utilization have stimulated consumption tremendously.

Scope of Service.—At the close of the fiscal year, June 30, 1936, the Authority was serving 11 municipalities, six county power associations, and six TVA direct retail power districts, all located in northeastern Mississippi, northern Alabama and Tennessee. Three important contracts for sale of power to industries have been made with the Monsanto Chemical Company, the Aluminum Company of America, and Volunteer Portland Cement Company. Legal skirmishes have continued, and during 1936, 19 private utilities in Alabama and Tennessee instituted suits directed against the general powers of TVA. The Alabama suit was dropped, but the Tennessee suit is progressing through the courts. The hostility of the private utilities has been extreme, but apparently has been subsiding some-

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what as the government policies have developed and the effects more concretely realized. There is really no intrinsic conflict of interest. What is involved, basically, is generation and partial transmission by the government, and then distribution through other agencies, including private utilities.

Proposed Pooling of Power.—A tendency toward cooperation was indicated during the year, which culminated shortly after the presidential election, in a conference between government representatives and the private utilities. Its object was to consider the pooling of power facilities in the territory which can be advantageously hooked up together by transmission systems. Through systematic pooling and coordination, private utilities would not be injured by the availability of cheap government-generated energy. While the pressure for rate reduction to consumers may be more effective than through ordinary regulatory means, the result, nevertheless, would be to allow reasonable operating costs and fair return on the properties used beyond the government generating and transmission activities.

Questions of Allocation.—A criticism frequently made is against the allocation of construction and developmental costs between power and other purposes. The total undertaking does involve important problems of allocation, since the bulk of the costs is jointly incurred for power, flood control, and other purposes. While the criticism may be partly justified—under such circumstances of joint costs any allocation must be nevertheless arbitrary—low cost power cannot affect the private utilities prejudicially, if beyond the purchase price paid there is added the reasonable cost of further transmission and distribution, including a fair return upon the facilities employed. Here is the crux of the controversy, with respect to which there has been undue misapprehension by the utilities, and misunderstanding by the more conservative public. There is no program of confiscation.

SECURITIES AND EXCHANGE COMMISSION

This body has been charged largely with the administration of the 1935 Federal holding company act. The chief function of the Commission is to bring about re-grouping of properties controlled in holding company systems, so as to include only coherent and contiguous territory within which maximum efficiency and management can be attained, also the elimination of the upper layers of holding company groups and simplification of corporate and financial structures.

The act requires registration with the Commission as the first step toward bringing about the readjustments in system organization. Approximately 65 holding companies have registered at the date of this writing (December), but most of the major systems have declined to register and have brought suits to test the constitutionality of the act.

Until this basic legal determination has been reached the active work of the Commission must necessarily remain in abeyance. If its power is sustained, there is still doubt as to its ultimate efficacy in bringing about desirable system re-grouping. Its task will be a tremendous one, and will encounter many legal, financial and technical obstacles. It does not regard its job as driving an entering wedge for public ownership, nor does it concern itself with matters of rates as such, but expects to furnish aid to state commissions in obtaining information required for intra-state regulation.

FEDERAL POWER COMMISSION

Special Activities.—The administration of the 1935 holding company act is partly intrusted to the Federal Power Commission, which is charged also with the 1935 amendments to the Federal power act. Under this new jurisdiction the Commission is undertaking a variety of activities directed to the advancement of the public interest. While it is concerned primarily with water power projects and interstate matters, and mostly does not reach direct rate making, it is active in bringing about better or-

ganization, wide coordination of power facilities, sound financing and accurate information, which may be used by States and local governments for rate making and other local purposes. Its special activities are as follows:

1. Division of the country into regional districts for voluntary interconnection of generating and transmission facilities.

2. Bringing about mergers and consolidations of properties to remove unnecessary corporations, simplify corporate structures, reduce overheads, and bring about economies of generation and transmission.

3. Exercising jurisdiction over security issues and assumption of corporate liability by utilities engaged in interstate transmission and sale of electricity. Eleven applications were received up to Nov. 10, 1936, for authorization of securities aggregating \$172,000,000.

4. Supervision over rates for electrical energy transmitted across state lines and sold wholesale for resale by utilities under the jurisdiction of the Commission.

5. Cooperation with state commissions in investigating cost of production and transmission by the means of interstate facilities beyond the jurisdiction of the States.

6. A plan for cooperation with state commissions with respect to matters of mutual interest.

7. Adoption of a uniform system of accounting effective Jan. 1, 1937, developed in cooperation with the National Association of Railroad and Utilities Commissioners and other state and Federal agencies.

8. Preventing duplicate directorates in utilities and financial, or other institutions, handling utility securities.

9. Continuing studies of power resources, facilities, markets and other matters of national concern. These reports have been made available to the public as completed under "The National Power Survey" and "The Electric Rate Survey."

Reports.—The following are the principal reports issued during the year:

Power Series No. 2, "Principal Elec-

tric Utility Systems in the United States." This covers 57 principal systems and 50 minor ones, with 90% of the installed electric capacity of the United States. It presents the individual systems with their corporate setup, securities, properties, and public service rendered.

Power Series No. 3, "Cost of Distribution of Electricity." This covers the distribution systems of 22 private and municipal electric utility systems, selected as representative of different conditions in different parts of the country. It shows the cost of retail distribution from local substations to the customers' meters, for commercial, industrial, rural and residential customers.

Rate Series No. 4, "Rates for Electric Service to Commercial and Industrial Customers." This covers commercial light and power service in cities of 2,500 or more population; also large commercial and industrial service in cities of 2,500 and over. It furnishes a broad basis of rate comparisons for the particular classes of service.

Rate Series No. 5, "Comparative Rates of Publicly and Privately Owned Electric Utilities." Comparisons are made between each class of service for each State on the basis of average charges for electric service in communities of similar size, for specified quantities of electricity. The study furnishes a broad basis for comparing rates in publicly and privately owned utilities, provided the data are intelligently used.

Organization.—To carry out its new and enlarged responsibilities, the Commission has reorganized its staff in appropriate bureaus and divisions, and has established regional offices in five cities—New York, Atlanta, San Francisco, Denver and Chicago.

Output and Sale of Electric Energy.—The data collected by the Commission and made public include the output and sale of electric energy for public use. The figures show striking advance during the past year. The kilowatt hour sales for the nine months ended Sept. 30, 1936, aggre-

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gated 83,031,000,000 kilowatt hours. This was an increase of 14% over the same period in 1935. The average daily output in September was 323,-447,000 kilowatt hours, the largest daily average for any month of record. The electric industry as a whole passed its previous peak in 1929, due to business recovery and to rate revisions which have included special schedules to stimulate consumption. The rate of advance long maintained before the depression has apparently been resumed and is likely to continue for an indefinite future.

PUBLIC WORKS ADMINISTRATION

Individual Allotments.—This agency has had an important place in the advancement of the public interest. It has been authorized to make allotments of funds for public utility improvements to municipalities and to other Federal agencies. Apart from funds supplied to the large hydroelectric development at Boulder Dam, Grand Coulee and Bonnyville, up to July 1, 1936, it has made allotments to numerous individual projects which are summarized as follows:

	Number of Projects	Federal and non-Federal Estimated Cost	Federal and non-Federal Allotments
Sewer Systems.....	940	\$322,250,878	\$226,473,350
Sewer and Water.....	140	12,182,112	10,035,860
Water Systems.....	1,602	189,034,091	124,234,676
Garbage & Rubbish Disposal.....	36	8,136,689	6,856,582
Gas Plants.....	23	1,554,212	1,364,744
Electric Power excl. Water Power.....	189	38,568,396	28,482,371
Miscellaneous.....	255	25,629,436	19,943,036
Total.....	3,185	\$597,355,814	\$417,390,619

Expenditures.—Of the total estimated cost of \$597,355,814, the amount applicable to non-Federal projects, especially municipal, is \$582,020,355. Of this total \$402,055,160 is covered by PWA allotments and the rest, \$179,-965,195, is raised by the applicants. Actual expenditures up to June 30, 1936, on all projects, amounted to \$103,316,097, providing 35,506,112 man-hours of employment. The corresponding figures for the non-Federal are \$101,080,761 of expenditure and 34,532,744 of man-hours.

Litigation Delays.—A considerable proportion of the projects has been delayed by litigation, instituted principally by private utilities which considered their own interests to be adversely affected by the public undertakings. Among electric projects, 26 undertakings involving a total estimated cost of \$11,494,382 and an allotment of \$10,122,923 have been held up due to injunctions granted by courts. While there were delays also in other projects, the aggregate was much less and the causes were mostly

other than injunction granted by the courts because of conceived injury to private utilities. The injunction cases are awaiting decision by the Supreme Court before the power of the PWA will be adequately determined with respect to assistance in municipal electric construction and development.

Electric Power and Other Projects.—Besides the projects summarized in the preceding table and paragraphs, PWA has made provisions also for other undertakings which involve not only electric power but multiple-purpose, including flood control, irrigation and navigation. The tabulation next page presents the estimated cost, the amount of allotment and the number of each class of projects, up to July 1, 1936.

Costs and Allotments.—Of the total estimated cost of \$430,616,194, the Federal projects involve an allotment of \$319,606,617. The estimated cost of the non-Federal projects is \$111,009,577, of which \$67,328,634 is covered by PWA allotments and the rest, \$43,680,943, is to be financed by

PUBLIC UTILITIES

	Number of Projects	Federal and non-Federal Estimated Cost	Federal and non-Federal Allotments
Flood Control, Water Power, Irrigation:			
Dams and Canals.....	129	\$ 63,412,812	\$ 61,969,444
Channel Rectification, Levees, etc.....	50	53,729,135	53,165,952
Storage Reservoirs.....	17	9,958,107	9,958,107
Water Power Development.....	19	161,773,414	121,250,649
Miscellaneous.....	139	49,081,725	47,930,098
Navigation Aids:			
Dams and Canals.....	28	92,661,001	92,661,001
Total.....	382	\$430,616,194	\$386,935,251

the applicants. The total actual expenditures on all projects up to July 1, 1936, amounted to \$93,548,035, representing 35,621,165 man-hours of employment.

Survey of Federal Activity.—The survey of Federal activity in the utility field by the several agencies indicates the advancement that has been made in government effort in the public interest. While the utility properties and services are located in individual States, and are subject primarily to state regulation, the place

of the National Government has, nevertheless, become an important one. It includes not only direct construction and operation of the great hydroelectric projects, but assistance in financing state and local undertakings, the fixing of rates for interstate sale of service, establishing control over interstate properties and activities, and particularly furnishing information to state and local agencies for effective regulation and for use in determining utility policies and programs.

WATER SUPPLY

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FEDERAL ALLOTMENTS

The allotments of the Public Works Administration for water mains, filtration plants, reservoirs, and complete water works, as compiled by the Division of Economics and Statistics, up to Nov. 1, 1936, were as tabulated next page.

Recently, Secretary Ickes has stated that since June, 1933, over 2,000 water works and related projects have been conducted by the PWA,—the maximal number of 138 being in Illinois; the maximal contributions, \$18,000,000 each, in Texas and California. The increase in allotments since Nov. 3, 1935, has been \$25,802,279, while the estimated cost of various works has been raised \$75,820,874.

For comparison, contracts awarded

for water works construction, as reported by the *Engineering News Record*, amounted to \$99,437,000 in 1928, and to only \$48,617,000 in 1929. In 1935, they amounted to \$80,677,000, of which \$59,062,000 were for the first 10 months. For the first 10 months of 1936, those which were reported, including Federal projects, amounted to \$81,734,000. While the construction, both Federal and non-Federal, has increased in volume, and the outlook at the end of 1936 is favorable, it has not kept pace with the growth in population.

NATIONAL RESOURCES

Since 1935, a movement to take stock of the nation's water resources, and to plan for their systematic conservation and utilization, has begun

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Type	No. of Projects	Allotment	Estimated Cost
Federal Projects			
N. I. R. A. Program			
Water Mains.....	29	\$ 216,220	\$ 216,220
Filtration Plants.....	1	339,504	339,504
Reservoirs.....	12	150,878	150,878
Complete Water Works.....	69	1,574,631	1,574,631
Total.....	111	2,281,233	2,281,233
Non-Federal Projects			
N. I. R. A. Program			
Water Mains.....	129	9,818,337	18,576,122
Filtration Plants.....	33	2,742,200	7,600,101
Reservoirs.....	74	10,141,015	15,708,809
Complete Water Works.....	697	49,937,165	72,692,952
Total.....	933	72,638,717	114,577,984
E. R. A. '35 Program			
Water Mains.....	47	2,836,853	5,454,434
Filtration Plants.....	25	1,429,897	2,730,797
Reservoirs.....	43	3,972,016	8,627,441
Complete Water Works.....	434	23,716,412	38,266,504
Total.....	549	31,955,178	55,079,176
E. R. A. '35 Supplemental Program			
Water Mains.....	5	174,681	388,181
Filtration Plants.....	3	122,543	205,651
Reservoirs.....	7	144,067	320,151
Complete Water Works.....	77	4,259,506	7,442,479
Total.....	92	4,700,797	8,356,462
F. D. A. '36 Program			
Water Mains.....	6	179,533	398,964
Filtration Plants.....	6	439,794	939,542
Reservoirs.....	3	86,567	192,372
Complete Water Works.....	76	2,710,036	4,933,361
Total.....	91	3,415,930	6,464,239
Grand Total.....	1,776	\$114,991,855	\$186,759,094

to produce results. Its first work was to obtain fuller knowledge of water resources, including water supply, and of other uses of water, and then the problems of stream pollution. The results of this movement, if confined to the collection of data and general planning, should prove advantageous.

POLLUTION CONTROL

There is evidently a growing sentiment in favor of Federal water pollution control. The Lornegan and Vinson Bills before Congress evidence this. The former proposes Federal control, the latter Federal cooperation. Both, however, make provision for financial aid, and therefore threaten the loss of local autonomy. It would seem as if interstate com-

pacts would best serve where the problems of water supply and water pollution transcend state borders. Examples of these are the Tri-State Compact for the control of pollution in the New York metropolitan area, and one recently made among the four States along the Delaware, for the use of that stream.

CONSTRUCTION IN CALIFORNIA

The construction of the aqueduct for the Metropolitan District of Southern California is moving forward rapidly. Over 30 of the 54 miles of cut and cover aqueduct and many of the tunnels and other structures had been completed by Oct. 1, 1936.

Los Angeles has the largest municipal area of the United States. The

WATER SUPPLY

addition to the Los Angeles water system extends to the Mono Basin, 100 miles beyond the present Owens River source. It is expected that in 1939 or 1940, 15 years after Mulholland announced the necessity for the new works, about 1,000 Mgd. will be added to the water resources of the city. The value of water in Los Angeles is evidenced by the construction of works to recover and re-use the ground water from an area of 183 acres which is artificially irrigated.

The scarcity of water on the Pacific Coast may be realized from the fact that prior to the introduction of Hetch Hetchy water to San Francisco, the old reservoirs had not been filled since 1911. These new works include the laying of a large main across San Francisco Bay, and, because earthquakes menace the system, independent 75,000-gallon fireservice reservoirs at the street intersections.

NEW ENGLAND

In Massachusetts, the dike at the Quabbin Reservoir (to supply the Boston District) is approaching completion, while at its main dam, the core wall is complete, the impervious fill has been carried above the core wall, the supporting earthwork is being placed rapidly, and the hydraulic fill has been contracted for.

At Hartford, Connecticut, work on the new Barkhamsted Reservoir progresses. At Bridgeport, a new reservoir storing 10,000 million gallons will be built on the Saugatuck River to supply the Bridgeport district.

WEST AND MIDDLE WEST

At Denver, where water is being diverted from the Pacific slope, a new aqueduct and additions to the water purification plant are approaching completion. Here are examples of the early English filters built fifty years ago, and of two other intermediate types of purification plant, using rapid filters with chemical treatment. The present modern rapid filter, which includes treatment for the removal of taste and odor by activated carbon, increases the capacity of the purification works by 40%.

Recently completed or under con-

struction are the large water purification plants at Milwaukee and Chicago. The Cincinnati plant, after over 30 years of excellent service, is being enlarged and modernized. The capacity of the plant at Miami is being doubled.

THE SOUTH

At Little Rock, Arkansas, the dam will impound 14,000,000,000 gallons of water in the Ozarks, from which it will be brought to the existing filters in the city, now treating the polluted Arkansas River water. In the Baltimore Water District, where water must be supplied at an unusual number of elevations, an elaborate system of automatic pumping stations has been developed to maintain proper pressures at all times and elevations. Birmingham, Alabama, enjoys a new industrial water supply, costing \$6,000,000.

MIDDLE ATLANTIC STATES

Extensive enlargements, consolidations and improvements are under way at Buffalo. At Atlantic City, 350,000,000 gallons of storage is being added to the collecting system on the main land, while a distributing reservoir holding 6,000,000 gallons is being built nearer the center of distribution. Like at some other coastal towns, the quality of the ground water has been impaired by pumping, which has drawn salt water into the supply.

WATER CONSUMPTION

During the depression, the consumption of water declined in many cities. With the resumption of business activity, the shortage of water is becoming apparent. Late in 1935, Governor Lehmann warned the public that the problem of supplying the cities in New York State was growing serious.

Perhaps the best example is that of the City of New York. In 1935, the daily margin between the dependable supply of 979 Mgd. and the consumption, was only 60 Mgd., or 7%. This margin of safety will be exhausted in two years. While small additions may be obtained from Rondout Creek, and from wells in

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Suffolk and in Richmond, which may raise the dependable supply to 1,089 Mgd., either more water must be available in 1947, or consumption must be curtailed.

The city is planning to develop the Delaware system to add 540 Mgd., at an estimated cost of \$273,000,000. This is an expensive addition, and universal metering is being advised to spread the cost over longer periods. At the present time, unmetered consumers use 57% of the water, and it is estimated that metering would reduce the per capita consumption from 134 to about 105 gals. daily, and postpone the taking on of a new major source of supply for 14 years. While meters would cost the City \$20,000,000 to install, with maintenance in addition, the net saving in the next 15 years is estimated at \$34,000,000.

In Boston, the general introduction of meters reduced the consumption from 128 gals. to 87 gals. per capita. For comparison, the metered consumption in New Orleans is 57 gals. per capita, in San Diego 80 gals., in Lexington (Kentucky) 82 gals., and in Rochester 95 gals. per capita.

PURIFICATION

The demand for water of better appearance and water which is non-corrosive increases. This is leading to the treatment of waters hitherto considered satisfactory. At Portland, Me., excellent clarification of water containing algae and suspended organic matter is being obtained experimentally by a rapid magnetite filter of the type hitherto employed for the clarification of sewage. This method promises much in practice. At Ambridge, Penn., a water containing 5 p.p.m. of manganese is being partially softened and the manganese removed therefrom by treatment with lime and zeolite.

The public is increasingly appreciating the economies of water softening, and is demanding softer water, the older treatment with lime and soda being often supplemented or replaced by treatment with zeolite.

The novelty in the field of de-

ferrization is the plant at Flushing, L. I., where Dr. Frank E. Hale has designed a plant which is successfully removing iron from an oxygen-free water by the addition of lime followed by filtration in a closed system.

The presence of fluorides in certain waters, which causes hypoplasia or mottling of the permanent teeth, notably in Colorado and Illinois, is receiving increasing attention. The usual water analysis does not include this rare element.

AIR CONDITIONING

Air conditioning is being introduced rapidly, and presents a new water supply problem. L. L. Lewis of the Carrier Engineering Corporation estimates that 10 or 15 years hence each person living in conditioned air will require an average of five gals. of water, and a maximum of 35 gals. per diem. These figures, however, may be greatly reduced by the use of cooling systems.

FLOODS

The month of March, 1936 was signalized by the occurrence of floods. Several cities, like Harrisburg, Penn., were short of water, while many others, like Pittsburgh, and Lawrence, Mass. had difficulty in maintaining their supply. Notable in this connection was the efficiency of the various state health departments, and the effectiveness of emergency disinfection with chorine. Little disease followed the floods, damaging as they were to property. The floods have taught the necessity of making water works flood-proof.

CROSS CONNECTIONS

The menace of cross connections is being increasingly realized, especially in tall buildings and some hospitals where siphonage of sewage into the water supply often occurs. Evidence of this is shown in the decision of the American Water Works Association to hold its annual conventions only in hotels where inspection shows that no danger of cross-connections exists. A considerable modification in plumbing requirements may be expected in the near future.

STREET AND HIGHWAY TRAFFIC

STREET AND HIGHWAY TRAFFIC

BY ERNEST P. GOODRICH

CONSULTING ENGINEER, NEW YORK

GENERAL

The improvement which took place in general business activity during 1936 was reflected in increased automobile registrations, gasoline consumption, and the volume of city and highway traffic. It is estimated that the total registration for the year approximated 27,100,000. Fortunately, the efforts toward accident prevention indicated that 1936 did not exceed the accident incidence for 1935, judging by the reports for the first six months. Rural deaths continued to soar, and the accident rates on Saturdays and Sundays were proportionately higher compared with the traffic than on the other days of the week. The child rate improved, and the query was raised why a similar improvement did not occur for the adult ages.

TRAFFIC ACCIDENTS AND PREVENTIVE MEASURES

Motor Vehicle Factor.—The National Safety Council's annual report of accidents showed motor vehicles to be "Number one" cause. At Greenwich, Conn., it was found that, of nearly 500 cars involved in accidents, practically half were local and half were "foreign."

Accidents Decline in New York.—The efforts made by New York City to reduce fatal accidents have resulted in a continuous decline from 1,163 in 1930, to less than 1,000 estimated for 1936. The police department reports \$1,000,000 per year as the estimated value of time saved to the motorists who use the west side elevated highway. It was reported that the opening of the Triboro bridge reduced the Queensboro bridge traffic congestion. Additional signal installations were made on intersections around points of high accident incidence. An extensive change was made to reduce the length of cycle on a number of avenues in

Manhattan in an endeavor to increase the speed on the cross streets.

The National Safety Council Contest developed the fact that no traffic deaths occurred in 138 municipalities with populations of from 5,000 to 10,000 during 1935, which figure will be more than reached in all probability among the 1,000 municipalities entered in the 1936 competition. By several authorities, speed was designated as being a major source of motor vehicle difficulties. One of the methods employed by Milwaukee to control vehicular traffic and increase pedestrian safety is by the installation of traffic lights.

Tried and Proposed Preventives.—It was reported from Washington, D. C., that suspending licenses reduced accidents. Sidewalks along state highways were advocated by the Travelers' Insurance Company of Hartford, among others, as accident preventives. After a survey made in 1935 of little used street blocks, the Chicago city council set aside 25 such areas for street play purposes. Only those vehicles which do business in any such block were permitted to enter. Des Moines installed and operated a motor vehicle testing station at which over 100,000 cars were tested. Seventeen per cent were found with defective lights, 30 per cent with defective brakes, and smaller percentages with defective wind shields, horns and other items.

Car Tests and Inspection.—Statistics collected by the police in Chappaqua, N. Y., in connection with a free safety lane operation showed that 64 per cent of the cars were in the lower cost brackets. Over half were four years old or more. Tests covered a complete check-up of all parts of the car. Fourteen per cent of the tires were reported as "poor." Twelve per cent of the brakes were also of that character. Poor steering conditions were found on 20 per cent

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of the cars. Twenty-two per cent had poor ratings on their lighting equipment. In answer to a question as to experience as to compulsory motor vehicle inspection, 19 out of 21 police chiefs who responded, stated that they were in favor of compulsory motor vehicle inspection. In Sacramento, Cal., slippery asphaltic streets were turned into non-skid surfaces by the use of a machine which combined heating and cutting operations and a strike-off plate in one continuous forward movement. Better highway illuminating was secured by the use of sodium lamps on a bridge at Schenectady. They are reported to be effective even in dense fog.

TRAFFIC LIGHTING AND SIGNALS

Sodium lighting was also installed through various parks in St. Louis and it is reported will be used in one of the tunnels of the Columbia River highway. Such lights are also being used on the San Francisco-Oakland Bay bridge. An Accident Prevention contest was initiated by the Chicago Park District with reference to the method of reporting an actual or hypothetical accident. In Georgia and Michigan, the courts held municipalities not liable when motorists drove against safety islands and underpass supports which were poorly lighted or where lights had gone out shortly before the accident. A paper presented at a meeting of the American Bar Association discussed the liability for motor accidents due to publicly owned vehicles. Differences in the attitude of the various States were disclosed. Some of them exempted the publicly owned vehicle. Many minor improvements were made by the traffic signal manufacturers. New York City instituted a much more rigorous schedule of fines and sentences for traffic violations, following similar action by New York State.

EDUCATION IN SAFETY

Education, enforcement, and engineering in that order, are the three means being used to promote traffic safety according to a sampling survey

of 25 council-manager cities made by the International City Managers' Association. Superior, Wis., instituted a survey by the local safety council and the police department with ten objectives, with the motto, "Making money by saving lives." One of the conclusions was that two new policemen paid a profit to the city. A marked reduction in traffic incidence was secured. The automobile industry backed a safety movement looking toward (1) making it "smart" to drive safely, (2) educating drivers on the rules of the road, (3) eliminating the unfit and reckless from the highways. A committee on Public Safety of the Federation of Women's clubs conducted a public safety campaign by the distribution of pamphlets to aid local women's clubs in advancing safety movements. Pittsburgh held what was designated as a traffic "Mardi Gras" with 20 educational floats. A free "traffic clinic" was also held for a week at which drivers were given an opportunity to measure their ability. The device was loaned by one of the casualty and surety companies.

The magazine, *Public Management*, characterized the ambulance as a traffic menace. The increasing literature on the subject of traffic included a book entitled *Sense and Safety on the Road*. The contributors to it included a former motor vehicle commissioner, a professor of education and psychology, and a professor of engineering, each discussing certain phases. The Institute of Traffic Engineers continued its activities and reported normal growth.

The Eno Foundation published a supplement to its book on "Simplification of Highway Traffic." The National Bureau of Casualty and Surety Underwriters published a manual for living in the automobile age entitled "Man and the Motor Car." The American Automobile Association issued a program for high schools on "Sportsmanlike Driving." A new manual of traffic control devices for use upon the rural highway was issued by the American Association of State Highway Officials after ten years of work. One of the

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prime objects of the Association is the achievement of as great uniformity as possible throughout the country.

TRAINING OF TRAFFIC OFFICERS

The Harvard University Bureau of Street Traffic Research with the International Association of chiefs of police held a New England Traffic Officers' Training School during the month of August, which was very successful. The Bureau announced 15 graduate fellowships. A full academic year of scientific training in modern traffic control and accident prevention for a carefully selected group of the nation's best police officers was provided through a fellowship grant to the Traffic Safety Institute of Northwestern University. In Berkeley, Calif., courses on traffic safety education were introduced in the Junior High Schools. It is the intention eventually to supply them in the elementary grades.

SURVEYS, TESTS AND STUDIES

A comprehensive survey of traffic conditions in Rhode Island showed that less than five per cent of motorists out of 1,000,000 observations at 21 stations "beat the light."

Studies conducted in Minneapolis showed a striking correlation between temperature and traffic intensity. The Bureau of Public Roads announced that better highways reduced vehicle operating costs more than enough to pay for the betterments, when properly adjusted to the traffic conditions. A committee of the American Road Builders Association pointed out the wide non-uniformity in traffic practices in 33 major cities. A Florida court sustained the legality of an ordinance which permitted motor buses but excluded taxi cabs. A number of cities instituted campaigns for abatement of the noise nuisance which included the needless use of automobile sirens and horns. Philadelphia, Gary, Louisville and New York City were mentioned in the *United States Municipal News* as cities which did so.

TRAFFIC AIDS

Directing traffic and the possible pursuit of criminals from a dirigible supplied with a special short wave transmitter and receiver was demonstrated in Cleveland. A deputy traffic commissioner gave orders to traffic men in 25 radio patrol cars, and carried on a two-way conversation with one of them. One of the advantages of the airship is the possibility of flying it slowly, whereas the airplane must cruise at relatively high speeds. The New England Planning Commission issued a report showing diagrammatically how to improve vehicular circulation by the introduction of detours around congested and restricted sections, by the introduction of traffic circles, grade-crossing eliminations, and widenings of bridges and cuts where possible. They also advocated the separation of opposing lines of traffic by center strips, the setting back of gas stations so as to provide parking space off the roadway, and other devices by which they estimated highway capacities would be increased several hundred per cent.

THE PARKING PROBLEM

The problem of parking was discussed by the Regional Planning Association of New York which reached the conclusion that facilities for movement have far outrun provision for parking vehicles when they have reached their destination, pointing out that the parking problem is becoming increasingly difficult practically everywhere.

Twenty-five New England cities and towns were reported to have municipal parking spaces, eight others being reported as considering proposals for such spaces. A charge was made for parking by one city. In a number of cities, motorcycles were used to check up parking. Dallas, Tex., reported marked benefits from the installation of 1,000 parking meters. Oklahoma City installed 300 additional meters. The average income per day per meter during the first four months of their installation was 47 cents. One hundred and fifty parking meters were installed in

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St. Petersburg, Fla. Their earnings over a five-month period approximated \$7 per meter per month. Maintenance costs were estimated at \$100 per year. The posting of receipts against individual meters required 2½ hours per day of accounting time. After four months of experience, 68 meters were discontinued. Meters were installed on alternate locations throughout the congested districts. Only two objections were received from merchants, but they were soon withdrawn.

Active objection was raised to the installation of parking meters by the American Automobile Association and its motor clubs. Nevertheless large installations are in contemplation, such as that at Kansas City where 3,000 have been ordered at \$58 each. They are purchased on the basis of 85 per cent of the revenue until the meters are paid for, but they become the property of the city after eight months whether they are paid for or not. The legal status of parking meters was discussed by the conference of mayors. The authorization of parking meters for revenue purposes was deemed to be a proper subject for state legislation.

TRAFFIC CONTROL

Improved devices were placed on the market for various items of traffic control. One such was an automatic traffic line marker. Another is a visible yellow marker fastened to the pavement by an adhesive. A ring of special design to be worn on the hand, which reflects light from the following auto head-light when the hand is extended from the automobile for signalling, was introduced. An improved aluminum permanent pavement traffic marker was placed upon the market. It has been found

to be an excellent reflector of light by both day and night.

A flashing "slow" sign was installed with marked success, no night wrecks having occurred at one dangerous point since its installation, whereas one or more a year (generally with at least one fatality and three or more injuries) had occurred previously. The need for a higher degree of visibility of motor traffic warning signs during dark hours induced the Illinois Department of Highways some years ago, to adopt a program of sign reflectorization which has proved so favorable in the eyes of the public that a demand was made for an expansion of the system. Better street name signs were advocated in Chicago where a survey showed a large percentage of intersections with defective or no signs. Connecticut is reported to be the first State to adopt (for 1937) a permanent type of automobile license plate.

The various systems of color sequence used by different cities in their traffic control systems were discussed in the *American City Magazine*. An endeavor is being made practically everywhere to secure a sequence which will reduce accidents with a minimum of delay at intersections. It was reported that New York City has installations covering some 60 miles of progressive systems of traffic control operated by synchronous motors. The progressive system in Philadelphia operates from a central control station, thereby introducing the possibility of flexibility. The latter system is the one employed extensively in Chicago where a new sequence of lights, known as Safety Amber Sequence, was installed during the year.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN PLANNING AND CIVIC ASSOCIATION, 901-3 Union Trust Building, Washington, D. C.

AMERICAN PUBLIC UTILITIES BUREAU, 280 Broadway, New York City.

AMERICAN TRANSIT ASSOCIATION, 292 Madison Ave., New York City.

AMERICAN WATER WORKS ASSN., 29 W. 39th Street, New York City.

EDISON ELECTRIC INSTITUTE, 420 Lexington Ave., New York City.

INTERNATIONAL ASSN. OF FIRE CHIEFS, Police Headquarters, Philadelphia.

NATIONAL ELECTRIC LIGHT ASSN., 420 Lexington Ave., New York City.

NATIONAL PARKS ASSN., 1512 H St., N. W., Washington, D. C.

PARK ASSN. OF NEW YORK CITY, INC., 295 Madison Ave., New York City.

PUBLIC SERVICE COMMISSION, STATE DIVISION, 80 Centre St., New York City.

DIVISION IX

DEFENSE AND ARMAMENT

THE UNITED STATES ARMY

BY ROBERT S. THOMAS

CHIEF CLERK, HISTORICAL SECTION, ARMY WAR COLLEGE

APPROPRIATIONS

In the current report of the Chief of Staff (General Malin Craig) this statement occurs: "In general it may be said that the increase in military appropriations for 1936 over those of preceding years marks an epoch in the period that has elapsed since the end of the World War. It is a recognition of the fundamental changes in our military situation that have occurred during that period." The United States emerged from the World War with a reservoir of trained personnel and war material. We had more than we needed to provide for the national security. This feeling of confidence, no doubt, motivated the various committees of the Congress to curtail sharply military appropriations in the years immediately following the world conflict; Army strength was pared down and equipment continued to be drawn from war-created reserve stocks. Unfortunately, curtailment of appropriations became a habit and it was only by the most strenuous efforts that General MacArthur, General Craig's predecessor as Chief of Staff, was able to convince the Congress that there was urgent need for increase in Army personnel, commissioned and enlisted, and for the adoption of a definite program of modernization.

CHARACTERISTICS AND COMPOSITION

In that our military establishment is designed solely for defense and un-

suited for aggression, its character is essentially different from armies maintained and expanded abroad. General Craig aptly sets forth the difference thus: "We may describe the type of the latter establishment as that of a finished machine, ready for instant use, within or without the borders of the country. In contrast, ours is an unfinished and an unassembled machine. Some of its parts are not in existence, some exist as rough forgings, others in semi-finished form. Only a few are in a condition for immediate use." Of the machine thus described, the Regular Army is the nucleus of a force which may be created to meet the exigencies of war; it garrisons our outposts, furnishes the personnel to train the civilian components, and keeps abreast of the use and development of modern tactics and weapons. The other two elements of the military machine are the National Guard and the Organized Reserves, the former a state force which may be called into service in a national emergency, the latter a reservoir designed to furnish trained officers for leadership assignments.

ORGANIZATION

The War Department is the managing agency of the Army. This agency is presided over by the Secretary of War (Harry H. Woodring) and he has two aides, one, the Assistant Secretary of War (to be named), the other, the Chief of Staff (General

Malin Craig). Under this combined direction, the General Staff and the various arms and branches of the service operate. The advice and best judgment of the Chiefs of the several arms and branches of the service reach the Secretary of War through the Chief of Staff and the Deputy Chief of Staff (Major General Stanley D. Embick).

The Regular Army is comprehended under the Four-Army Plan by which the following Army Headquarters and command are established: First (Major General Fox Conner) at Governors Island, New York; Second (Major General Charles E. Kilbourne) at Chicago; Third (Major General George Van Horn Moseley) at Fort Sam Houston, San Antonio, Texas; and Fourth (Major General George S. Simonds) at San Francisco.

For flexibility in command and control, the United States and its possessions are further divided into Corps Areas and Departments, each in turn commanded by a general officer. First Corps Area (Major General Fox Conner) headquarters, Boston; Second Corps Area (Major General Frank R. McCoy) headquarters, Governors Island, New York; Third Corps Area (Major General Albert J. Bowley) headquarters, Baltimore; Fourth Corps Area (Major General George Van Horn Moseley) headquarters, Atlanta, Georgia; Fifth Corps Area (Major General William E. Cole) headquarters, Columbus, Ohio; Sixth Corps Area (Major General Charles E. Kilbourne) headquarters, Chicago; Seventh Corps Area (Major General Stanley H. Ford) headquarters, Omaha, Nebraska; Eighth Corps Area (Major General Herbert J. Brees) headquarters, San Antonio, Texas; Ninth Corps Area (Major General George S. Simonds) headquarters, San Francisco; Hawaiian Department (Major General Hugh A. Drum) headquarters, Fort Shafter; Philippine Department (Major General Lucius R. Holbrook) headquarters, Manila; Panama Canal Department (Major General Henry W. Butner) headquarters, Quarry Heights. These areas and

departments are further subdivided into tactical divisions and brigades.

Within the division, an interesting innovation was proposed during the year—to reduce the man power of the combat division from 22,000 to 13,500 to accelerate its striking power. Experts believe that a division thus reduced in number of men will, because of increased mobility and superior efficiency of modern rifles, guns and artillery, have as great "fire power" as the former larger division.

ARMY STRENGTH

Regular Army.—Although the Congress provided for 165,000 enlisted men, fiscal limitations imposed upon the War Department during 1936 held the maximum figure attained to 147,000. For the year 1937, the top figure has again been provided, to be reached through 12 equal increments throughout the year.

National Guard.—It appears that this component will reach its authorized strength of 200,000 in the fiscal year 1938. During 1936, 5,000 men were added and a like increase is provided for in 1937.

Organized Reserves.—The strength of this part of the Army consisted on June 30, 1936 of 95,619 officers eligible for assignment, active duty and reappointment, and 15,334 without such eligibility owing to their failure to comply with prescribed conditions.

TRAINING

Regular Army.—Marked improvement was noted during the year in the employment of weapons, in combined training in larger units, and in the use of signal communications. As a result of the Army Maneuvers held during the year, the Chief of Staff indicated that emphasis should be placed on the training of basic units in maneuver and in terrain combat exercises. An interesting incident of the established school system of the Army was the completion of the first year of schooling of the numerically increased Corps of Cadets at the United States Military Academy, West Point. All available appointments were not made during the year

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but indications point to a full Corps in 1937.

National Guard.—Average attendance at armory drills for the year was 159,350 and at the summer training camps, 176,243. Armory training as a preparation for field training served to correct many deficiencies disclosed during the previous field training period. Trucks were used to carry organizations to ranges for small arms qualification firing before going to summer camps. National Guard troops likewise profited greatly by participation in the Regular Army maneuvers held at Allegan, Mich.

Organized Reserves.—Active duty training for members of this Corps was provided for more liberally during the past year than ever before, *viz.*, 21,300 to take 14-day active duty training; 1,000 to train with the Regular Army for a period of one year; 300 for extended active duty with the Air Corps; 200 for more than 14-day training at army schools; and five Reserve Officers for extended active duty on the War Department General Staff for not to exceed four years each. From 1,000 second lieutenants selected to train for one year with the Regular Army, 50 will be chosen to receive permanent commissions as a reward for demonstrated superiority.

PROMOTION POLICY

Through the operation of the Promotion Act passed in the First Session of the 74th Congress, much of the so-called "hump" left in the officers' list as an aftermath of the World War has been eliminated. Retirements and separations in the higher grades were numerous during the year and considerable progress was made toward making officers available at an earlier age for the duties imposed by advanced rank. The benefit to morale is obvious. In the Air Corps, by the provisions of Public Act 691, the system of temporary promotion prescribed in 1926 was considerably improved upon so that young Air Corps officers are now brought to rank commensurate with the responsibilities placed upon them. Expansion of the Air Corps has made

it difficult to provide sufficient numbers of Regular Army officers for necessary assignments. To assist in meeting this shortage, a maximum of 1,350 Reserve Corps officers are authorized to be called to active duty with the Regular Army Air Corps for a period of five years. The number called for such duty annually is controlled by available appropriations—in the current fiscal year, 300 were called.

Public Act 726 which authorized the President to determine grades and ratings of enlisted men in the Army was a boon to the man in the ranks. The old system of fixed percentages, governing the numbers in various grades and ratings, produced too rigid a distribution. There was no susceptibility of adjustment to changing modern conditions. Motorization and mechanization within the Army changed all preconceived ideas regarding the enlisted man. Nowadays he is called upon to handle, operate and keep in repair all forms of mechanical equipment, such as airplanes, tanks, and motor vehicles of every description. Under the new act and by reason of increased appropriations, commanding officers of units were able in the past year to adjust and distribute grades and ratings with a degree of flexibility never before possible of achievement. The enlisted man from now on will have a definite incentive either for the exercise of specialized qualifications he may possess or for the following of a course of training to fit himself for a specialist's rating.

ARMAMENT, MOTORIZATION AND EQUIPMENT

Modernization.—The task of modernizing the Army's several branches of the service was considerably advanced in the field of mechanization and motorization. For the mechanized Cavalry Brigade, nearly all necessary mechanized equipment was procured and orders were placed for securing all scout cars needful to equip 13 Mechanized Platoons to be employed with Regular mounted regiments of Cavalry. In the Infantry, equipment is being secured for the

THE UNITED STATES ARMY

Tank Regiment and for three of the seven tank companies to be used with Regular Infantry divisions. An appropriation of \$1,000,000 was made available during the year to purchase approximately 1,000 tactical and administrative motorized vehicles, accomplishing 59% of the needs in this category. Further elements of progress towards modernization during the year were recorded in the branches of the service as shown below.

Field Artillery.—One battalion, operating with the Mechanized Cavalry Brigade, was motorized; in artillery units serving with the First Cavalry Division and the Mechanized Brigade, 75-mm. guns were largely replaced by 75-mm. howitzers whose carriages were materially altered; batteries were equipped with high-speed adapters to fit them for use with motorized units, and tractors were provided for 75-mm. truck-drawn units.

Infantry.—Regimental trains were stripped of all equipment which could be classed as contingent only, thereby increasing facilities for the supply of essential items; provision was made for the procurement of 53 81-mm. mortars and 53 of the .50 caliber machine guns for the infantry and the cavalry; radio equipment was furnished for mechanized units; an improved mount was designed for machine guns, and a limited number of .30 caliber semi-automatic rifles were procured.

Cavalry.—Scout car platoons and motorized trains were brought to a high state of efficiency as parts of cavalry regiments operating in field maneuvers at Marfa, Texas; experimentation was pushed in the development of a more efficient anti-mechanization weapon and a more mobile anti-machine gun weapon for horse cavalry.

Coast Artillery.—This branch improved the methods employed for anti-aircraft machine gun fire-control and improved and simplified director apparatus for anti-aircraft cannon. Substantial progress was made in the program of augmentation of seacoast defenses, making use of \$3,150,973

made available for the improvement of Pacific Coast harbor defenses; \$3,141,780 for Hawaii; and \$924,194 for strengthening fortifications in Panama.

Engineers.—The 29th Engineers, the principal topographic unit of the Army, conducted field operations in the vicinity of Puget Sound, carrying out experimental work with new aerocartographs and multiplex instruments for the reduction of field data. In the field of general engineering, important progress was made in the construction of fixed and floating bridges, in the improvement of searchlight and electrical equipment, and in devising obstacles to mechanized forces.

Chemical Warfare Service.—Work in the development and production of appliances for defense against chemical warfare was continued and 20,000 latest type gas masks were acquired during the year.

Signal Corps.—Two new types of wire-laying reels were issued, capable of speedy operations with a minimum of personnel, progress was made towards elimination of manual operation of telegraph and substitution therefor of the multiplex printer operator, and the 115 radio stations of the Army Radio Net were thoroughly modernized.

Air Corps.—As a result of the competitive system of bidding for the furnishing of aircraft, considerable progress was made during the year in the production and procurement of various types of airplanes. The Severesky Aircraft Corporation was given an order for 77 planes of tapered, low-wing, cantilever monoplane type: 50 of the two-place pursuit type were secured in August from the Consolidated Aircraft Corporation; 87 bombardment planes (Martin type) were delivered and an additional 132 of Model B-18 bombers were secured through the Douglas Aircraft Company; in the attack class, 117 airplanes, with fully retractable landing gears, were procured from the Northrop Corporation and a two-engined plane was bought from the Curtiss Aeroplane and Motor Company for experimental, attack purposes: bids on ob-

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servation planes were rejected as being too high, but the National Guard exercised its contract option in this instance and purchased 19 of the type: for basic training, the North American Aviation Incorporated secured an award for the delivery of 82 airplanes to be equipped with Wright engines and two-position, controllable propellers: partial delivery on a contract for 30 basic training planes was also made by the Severesky Aircraft Corporation: for primary training, the production of 26 airplanes by the Stearman Aircraft Company was initiated: and for cargo purposes, the Douglas Aircraft Company was awarded a contract for 18 airplanes.

For communication purposes, aircraft radio command sets, interphone sets, and marker beacon receptors were brought to a high state of practicability and the following new equipment was developed and standardized: high altitude microphones, short and long range liaison sets, liaison receivers, and radio compasses.

Two special flights were arranged during the year to test ferrying planes to the Panama Department. The first flight, made in February, consisted of 11 bombers and 13 pursuit planes which departed from Langley Field and, after a short maintenance stop at San Antonio, went through Central America to the Canal Zone. The second flight, made in March, consisted of nine new airplanes ferried to the Canal Zone over the regular Central American route.

Ordnance Department.—New, fast-cutting carbide tools along with machine tools suited to their use were developed, and a working agreement with combat arms relative to greatest possible use of increase in power and range of divisional artillery without unduly increasing weight and complication of guns and ammunition was reached.

Medical Department.—Progress was made in the early detection of tuberculosis by a rapid method of x-ray photography which showed that out of 7,405 radiograms thus made, 1.91 per cent were found with active or inactive symptoms of the disease; immunization with marked

success to enrollees of C.C.C. camps to control epidemics of cerebrospinal meningitis was applied; the successful use of atabrine as a prophylaxis against malaria was continued, and the protective properties of Army typhoid vaccine through a comprehensive laboratory study of the strains of the typhoid organism were greatly improved.

CONSTRUCTION AND HOUSING

As a measure of relief to the unemployment situation throughout the country, Emergency Relief funds in the amount of \$15,731,019 were allotted to the Quartermaster Corps during the year. This money was spent for repairs and improvements to buildings and utilities at various Army posts and stations. In expending this sum, a peak employment of 17,434 men was reached, providing 15,210,876 man-hours of work. From Public Works funds, nearly \$500,000 was allotted to the War Department and applied to Army housing construction, providing for approximately 45,000 officers and enlisted men and securing hospital facilities for about 5,000 persons. Funds were also made available by the last Congress for the establishment of an Air Corps Depot at Sacramento, Calif.; continuance of construction at Hickam Field; building of runways at Langley Field; construction of needed buildings and increased water supply facilities at the U. S. Military Academy at West Point, and for ammunition storage facilities in Hawaii. The present value of Army barracks, quarters, and other structures is approximately \$500,000,000, requiring a very considerable annual outlay for upkeep. Urgent necessity exists for a suitable public building in the District of Columbia to house the various activities of the War Department. At present, the Department occupies a large number of widely separated buildings, many of which are rented. The consequent dispersion of subordinate activities is not productive of the greatest possible efficiency in operation.

THE UNITED STATES ARMY

CIVILIAN CONSERVATION CORPS

Under the supervision of the director of Emergency Conservation Work, the War Department receives, immunizes, conditions, organizes, feeds, clothes, and shelters the men enrolled in the Corps. It also establishes, constructs, and administers the work camps; supervises the health, sanitation, hospitalization, welfare, and recreation of members of the Corps. The peak load of men thus handled was reached in August, 1935 when the enrollment reached 506,000 men. Generally better economic conditions were reflected in a decrease in this figure to 350,000 in April, 1936, divided among 2,109 work camps.

NATIONAL GUARD

On June 30, 1936, the strength of this arm was 189,173 as opposed to an authorized strength of 194,936. The total National Guard allotment, active and inactive, includes 1,073 headquarters and 3,906 units distributed among some 1,500 different stations in the several States and Territories. Of these, 210 headquarters and 635 units remained on the inactive list on June 30, 1936. During the year, motorization of 36 field artillery regiments (75-mm. guns) was completed. Authorization was given for 376 officers and 88 enlisted men to attend various Army service schools, and 24 enlisted men of the National Guard were enrolled in the U. S. Military Academy.

PANAMA CANAL

The Panama Canal, an independent establishment of the United States Government, has had as its Governor since August 27, 1936, Colonel C. S. Ridley. The area of the Canal Zone, including land and water, but not including water area within the three-mile limit from the Atlantic and Pacific ends, is 552.8 square miles; Gatun Lake, when its surface is at normal elevation (85 feet above sea level) has an area of 163.4 square miles; the entire water area of the Zone including Madden Lake, is 190.94 square miles. The Canal is 50.72 miles in length from deep water in the Caribbean Sea to deep

water in the Pacific Ocean, while the shore to shore length is approximately 40½ miles; channel width ranges from 300 to 1,000 feet and there is a minimum depth of 41 feet. Average time of ship passage through the Canal is from seven to eight hours, record passage having been made in four hours, ten minutes; maximum traffic capacity is estimated at 48 ships of usual size per day, or about 17,000 a year.

For the control of the area of the Zone, the United States paid the government of Panama an original sum of \$10,000,000 and, since 1913, has been paying \$250,000 yearly. As of June 30, 1936, capital investment stood at \$549,874,826.95, exclusive of moneys appropriated for defense purposes; net revenue to the same date totaled \$15,451,839.77.

The present civil population of the Zone is 29,190, of whom 8,417 are Americans. Of this population, 2,589 Americans and 4,726 of other nationalities were employed last year by the Panama Canal and the Panama Railroad. The total working force employed is comprehended on two rolls; (1) a "Gold Roll," comprising supervisory, technical, higher clerical, and highly skilled mechanics, and (2) a "Silver Roll," for those hired to accomplish lower grades of work.

For the year ended June 30, 1936, there were 5,382 commercial transits through the Canal; of these, 2,612 went from the Pacific to the Atlantic with a total of 18,256,044 cargo tons, and 2,770 went from the Atlantic to the Pacific with a total of 8,249,899 cargo tons. By nationality, the total transits were divided as follows: United States, 2,045; British, 1,304; Norwegian, 556; German, 310; Japanese, 271; Panamanian, 201; Danish, 156; Netherland, 139; Swedish, 131; and the remaining 269 were scattered among fifteen other nationalities.

Educational facilities for the Zone are provided by the Balboa Junior College which graduated the following numbers for the school year 1935-1936: Engineering, 9; Commercial, 1; Liberal Arts, 14. For the same period there were 168 graduates

IX. DEFENSE AND ARMAMENT

from the two high schools in the Canal Zone.

THE PHILIPPINE ISLANDS

The new government of the Philippine Islands began the year with a bonded debt of \$59,574,850 of which amount the sum of \$20,851,500 was owned by the Philippine government itself, having been purchased from sinking funds. The first year's operation of the Commonwealth of the Philippine Islands under President Manuel L. Quezon showed highly satisfactory results. It should be borne in mind that, while autonomous powers of the insular government have been greatly broadened by the Independence Act, the sovereign relations between the United States and the Philippine Islands have not been changed, and there will be no complete Philippine independence until separation of sovereignty is accomplished on July 4, 1946. The United States is represented in the islands by a High Commissioner to the Philippine Islands (vacancy since the resignation of the Honorable Frank Murphy in the fall), and by General Douglas MacArthur as adviser to the government in military and naval matters.

MILITARY EDUCATION*

Cavalry School, Fort Riley, Kansas.—Officers' Refresher, 6; Regular Army Officers, 22; Advanced Equitation, 10; National Guard and Organized Reserve Officers, 34; Post of Fort Riley, 18; Noncommissioned Officers, 25; Noncommissioned Officers Advanced Equitation, 13; Horseshoer, 43; Saddler, 22; National Guard Noncommissioned Officers, 10.

Field Artillery School, Fort Sill, Oklahoma.—Regular, 51; Advanced Horsemanship, 3; Motors (Advanced), 9; Communications (Advanced), 9; National Guard and Reserve Officers (Fall), 47; National Guard and Reserve Officers (Spring), 51; Refresher 10. For Enlisted Men, the following—Horseshoers, 25; Motor Mechan-

ics, 72; Saddlers, 21; Battery Mechanics, 15; Communications, 57; Cooks and Bakers, 57; Mess Sergeants, 7.

Coast Artillery School, Fort Monroe, Virginia.—For Officers, the following—Regular, 32; Advanced Technical, 4; Refresher, 1; National Guard and Reserve Battery Officers, 38. For Enlisted Men, the following—Electrical, 21; Electrical (Automotive), 10; Master Gunners, 9; Radio, 6; Refresher (Electrical), 2; Special Automotive for Electrical Graduates, 2; Special Radio Operator, 4; Special Clerical, 27; Special National Guard Radio, 10.

Engineer School, Fort Belvoir, Virginia.—For Officers, the following—Regular Army, 15; National Guard (13) and Reserve (19), 32. For Enlisted Men, the following—Surveying, Drafting and Aerial Photographic Mapping, 22; Map Reproduction and Photography, 9; Electrical, Motors and Water Purification, 13.

Signal School, Fort Monmouth, New Jersey.—For Officers, the following—Company, 13; National Guard and Reserve, 17. For Enlisted Men, the following—Radio Communication, 11; Wire Communication, 7; Meteorological Observers, 31; Meteorological Forecasts, 5.

Finance School, Washington, D. C.—Resident, 34; Special for graduates of U. S. Military Academy, 50.

Infantry School, Fort Benning, Georgia.—For Officers, the following—Regular, 120; Tank, 23; National Guard and Reserve Company Officers, 184; Refresher, 25. For Enlisted Men, the following—Motor Mechanics, Regular Army, 76; Communications, Regular Army and National Guard, 54; Horseshoers, 12.

Medical Field Service School, Carlisle Barracks, Pennsylvania.—Advanced, 52; Basic, 45; Noncommissioned Officers, 41.

Army Medical Center, Washington, D. C.—Basic Graduate, 31; Advanced Graduate, 9. Army Dental School—Advanced Graduate, 6; Professional Specialist, 4. Army Veterinary School—Basic Graduate, 4. For Enlisted Men, the following—X-ray

* In each case below, the name of the course presented at the various schools will be followed by a figure representing the number of graduates from such course.

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Technician, 52; Laboratory Technician, 11; Dental Technician, 12; Veterinary Technician, 12.

School of Aviation Medicine, Randolph Field, Texas.—Aviation Medicine, 15.

Ordnance School, Massachusetts Institute of Technology; Watertown Arsenal, Massachusetts; Picatinny Arsenal, New Jersey; and Aberdeen Proving Ground, Maryland.—Basic, two-year course, 10.

Ordnance Field Service School, Raritan Arsenal, New Jersey.—Noncommissioned Officers, 25; Enlisted Specialists, 89; Officers, Signal Corps (1), Marine Corps (2), National Guard (7), 10.

Chemical Warfare School, Edgewood Arsenal, Maryland.—Special Navy, 40; Unit Gas Officers, 47; Line and Staff Officers, 20; Navy Line Officers, 20; Field Officers, 44.

Quartermaster Corps School, Philadelphia.—Officers, 22; National Guard and Reserve Officers, 10. Enlisted Men, 49.

Quartermaster Corps Subsistence School, Chicago, Illinois.—Officers, Quartermaster (7), Veterinary Corps (2), Navy (2), 11. Special for Noncommissioned Officers, 16.

Quartermaster Corps Motor Transport School, Holabird Depot, Baltimore.—Officers, Regular Army, 8; Marine Corps, 1; Chinese Army, (1), 10. Enlisted Men, 126.

Quartermaster Corps Schools for Bakers and Cooks.—From 12 schools, 110 officers; 69 Reserve Officers; 1,000 Enlisted Men.

Air Corps Tactical School, Maxwell Field, Montgomery, Alabama.—59 Air Corps Officers, 6 Regular Army Officers, 3 Marine Corps Officers, and 1 Naval Officer for a total of 69. Tactical Unit Training (1-year course), U.S.A. Flying Cadets, 131.

Air Corps Primary Flying School, Randolph Field, Texas.—48 Regular Army Officers; 140 Flying Cadets; 4 foreign students for a total of 192.

Air Corps Engineering School, Wright Field, Dayton, Ohio.—Aero Engineering, 7.

Air Corps Advanced Flying School, Kelly Field, San Antonio,

Texas.—45 Regular Army Officers; 130 Flying Cadets; 5 foreign students for a total of 180.

Air Corps Technical School, Chanute Field, Rantoul, Illinois.—For Officers, the following—Communications, 12; Maintenance Engineering—Armament, 11; Photography, 3. For Enlisted Men, the following—Airplane Mechanics, 19; Armorers, 20; Machinists, 14; Parachute Riggers, 20; Radio Operators, 34; Radio Repairers, 24; Radio Operators and Repairers, 16; Welders, Sheet Metal Workers, 23; Supply and Technical Clerks, 36; Instrument Inspection and Maintenance, 26. For National Guard Officers—Maintenance Engineering, 7. For National Guard Enlisted Men—Airplane Mechanics, 7; Armorers, 1; Radio Operators and Repairers, 5; Parachute Riggers, 2. For Marine Corps Enlisted Men—Armorers, 1. For Philippine Constabulary Enlisted Men—Airplane Mechanics, 3; Armorers, 1; Parachute Rigger, 1.

Command and General Staff School, Fort Leavenworth, Kansas.—A total of 115.

The Army War College, Fort Humphreys, Washington, D. C.—89 Regular Army Officers; 4 Navy Officers; 2 Marine Corps Officers for a total of 95.

The Army Industrial College, Washington, D. C.—42 Regular Army Officers; 8 Navy Officers; 2 Marine Corps Officers for a total of 52.

United States Military Academy, West Point.—From the June, 1936 class of cadets, 276 (two of this number were not commissioned after graduation).

Reserve Officers' Training Corps.—

Units	Enrollment
Senior.....184.....	79,953
Junior.....140.....	53,549

In the 58 Summer Training Camps, there were enrolled 72 basic course students and 6,424 advanced course students. A total of 38 preparatory schools, including high schools, received government aid. In the second year advanced course, there was

IX. DEFENSE AND ARMAMENT

an enrollment total of 5,607 and to 4,831 graduates from this course there were offered commissions as lieutenants in the Officers' Reserve Corps and 788 certificates were granted to graduates under the age of 21, or who did not desire appointment at that time.

Citizens' Military Training Camps.—There were 58,327 applications received; of these there were ordered to camp, 35,089; of this number, 32,312 reported to camp; these provided an enrollment of 31,480; from this enrollment, 30,329 completed the training. There were 929 graduates from the Blue Course.

Civilian Educational Institutions.—A total of 112 commissioned officers of the Regular Army took courses of instruction at civilian institutions in the United States. They were divided among the several arms of service as follows: Infantry, 3; Field Artillery, 3; Cavalry, 4; Coast Artillery Corps, 2; Air Corps, 15; Corps of Engineers, 18; Signal Corps, 12; Judge Advocate General's Department, 11; Quartermaster Corps, 11; Finance Department, 1; Medical Department, 23; Ordnance Department, 6; Chemical Warfare Service, 3.

Foreign Schools.—A total of 27 commissioned officers of the Regular Army attended foreign schools as students: Ecole de Guerre, France, 2; German General Staff School, 1; Traveling scholarship in Europe, 1; Courses in Surgery, Vienna, Austria, 2; Oxford University, England, 1; Language students—China and Japan, 14; France, 5; Spain, 1.

Foreign Officers.—During the year, 11 officers from foreign armies and navies were in attendance at our Army service schools or attached to our Army organizations as follows: Field Artillery School, 1; Air Corps Flying School, 1; Cavalry School, 1; Command and General Staff School, 2; Army Medical Field Service School, 1; Motor Transport School, 1; School of Aviation Medicine and attached to Field Artillery regiments, 3. By countries, the foreign officers represented were: China, 5; Domin-

ican Republic, 1; Japan, 1; Mexico, 2; Turkey, 2.

GENERAL STATISTICS

Inspector General's Department.

—A total of 1,064 inspections were made, 334 involving supply and administration; 670 involving discipline and morale; 660 involving disbursing accounts.

National Guard.—There were 73 instances in which the States made use of the National Guard for emergency duty. This involved 1,821 officers, 11 warrant officers, and 23,583 enlisted men. Eleven of the calls were motivated by labor disputes; 28 were occasioned by public disaster such as floods, tornadoes and forest fires; 26 were for the purpose of aiding civil authorities in enforcing the operation of civil law; and eight calls were miscellaneous in character.

Judge Advocate General's Department.—There were 1,742 persons tried by general court-martial; 1,645 convictions and 97 acquittals resulted. There were prepared 1,116 formal written opinions concerning the making or operation of contracts; 1,097 opinions were handed down pertaining to contractor's bonds and claims; 573 opinions were given concerning Army organization and administration. The Patent Section, collaborating with the Department of Justice, defended 48 suits, representing claims for \$295,000,000, and prosecuted 68 patent applications.

Corps of Chaplains.—During the year, the Regular Army Chaplains Corps was brought to its full strength of 125. In the National Guard there are 220 chaplains and in the Reserve Corps, 1,135. Regular Army chaplains conducted 19,358 services with an attendance total of 1,943,176; marriages performed, 730; baptisms, 1,650; funerals, 2,047. Services for Army personnel by civilian ministers, 3,809 with an attendance total of 223,550. Services by Reserve chaplains on active duty in Civilian Conservation Corps camps, 57,916 with an attendance total of 5,658,667; marriages performed, 139; baptisms, 75; funerals, 282. In the Army Ex-

THE UNITED STATES ARMY

tension Courses, 482 chaplains were enrolled, completing 1,361 subcourses.

Finance Department.—Disbursements: \$870,296,597.44 in 3,004,065 vouchers. Invoices: 3,106,149 provided a means of saving \$1,406,362.69 through discounts taken; total thus saved since July 1, 1919 amounts to \$7,719,591.45. Savings accounts: 7,179 active accounts on June 30, 1936 and the amount deposited by soldiers during the year totaled \$1,047,191.36 on which interest was paid in the amount of \$45,164.35. From June 30, 1873 to June 30, 1936 the sum of \$74,941,339.26 has been deposited in soldier accounts and it has earned \$3,883,656.50 in interest. The largest soldier deposit of record is \$26,076. There was disbursed by the Finance Department to the Civilian Conservation Corps a total of \$514,039,620.68 during the fiscal year.

Signal Corps.—The Washington-Alaska Military Cable and Telegraph System handled a total of 10, 076,880 words in commercial messages and 4,973,611 words in Government messages. Receipts from commercial traffic amounted to \$308,931.40. There were maintained 177 government-owned telephone switchboards with 40,363 telephones connected hereto. Twenty switchboards with 2,726 telephones were rented from commercial companies. The Army Radio Net handled a total of 38,999,278 words.

Medical Department.—Cared for sick in hospitals the equivalent of 3,219,604 patient days. The following averages per day were maintained:

Hospital patients.....	8,820.8
Quarters patients.....	506.6
Outpatient treatments.....	7,032.1

During the year, the hundredth anniversary of the founding of the world famed Medical Department Library was commemorated.

Historical Section, Army War College.—This office has completed card catalogues covering selected documents from the records of approximately half of the combat divisions of the American Expeditionary Forces and it published during the

year a second volume of an "Order of Battle" series, this latest book covering General Headquarters of the A.E.F., the Services of Supply, Armies and Corps, the American Forces in Germany, in Russia, in Siberia, and in Italy.

Adjutant General's Department.—Army Extension Courses enrolled a total of 95,721 students, divided as follows: Officers: (Reserve), 55,514; (National Guard), 11,210; (Regular Army), 1,416—Enlisted: (Regular Army), 1,297; (National Guard), 18,569; (Reserve), 925. C.M.T.C. trainees, 2,927; Civilians, 3,863. There were 158,438 subcourses completed requiring 2,399,109 hours of instruction with an average cost per student of \$1.82. Army Library Service maintained 151 libraries, containing from 500 to 40,000 volumes each from which there was a recorded circulation last year of approximately 1,661,700 books. Four Army transports were each furnished with 592 new books and, for the year, there was expended for books, \$14,700; for magazines, \$6,200; for librarians' salaries, \$6,371; and for book transportation, \$727. Motion Picture Service, equipped with the latest type projection lighting devices, provided 21,750 programs to audiences totaling 8,632,400. Hostess Service maintained 12 permanent and 20 temporary hostesses during the period of the summer training camps as aids in the conduct of social activities. World War records included 942,700 additional documents as new receipts for filing; some 674,400 documents were removed from organization files and, of these, 90,460 were refiled as personnel records and 420,000 disposed as duplicates or unofficial in character. Approximately 120,000 papers await disposition at the hands of the National Archivist. At the close of the year there were in organizational files approximately 114,293,800 documents in which 230,000 searches were conducted over a twelve-month period. Fingerprint identifications to the number of 77,796 were received during the year, 732 for officers and 77,064 for enlisted men. There is now established

STRENGTH OF THE REGULAR ARMY OF THE UNITED STATES JUNE 30, 1935, AND JUNE 30, 1936,
AND LOSSES DURING THE FISCAL YEAR INTERVENING

Arm of Service

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Arm of Service	Strength, June 30, 1935		Strength, June 30, 1936		Officers										Warrant Officers					Total
	Officers	Enlisted men	Officers	Enlisted men	Retired	Resigned	Discharged (1)	Dropped (2)	Dismissed	Relieved from active duty	Died			Total	Retired	Dismissed	Discharged	Of disease	Died	
											Of disease	Of accident	Suicide							
General Officers of the line.....	66	.....	67	.....	11	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
General Staff Corps.....	218	.....	222	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Army Staffs.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Adjutant General's Department.....	92	.....	92	.....	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Inspector General's Department.....	40	.....	42	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Judge Advocate General's Department.....	94	.....	92	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quartermaster Corps.....	687	7,691	694	9,721	29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medical Department.....	1,280	6,604	1,293	8,099	33	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finance Department.....	122	372	122	442	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Corps of Engineers.....	460	4,444	484	5,266	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ordnance Department.....	266	2,090	269	2,315	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Signal Corps.....	207	2,646	209	3,244	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chemical Warfare Service.....	83	450	82	670	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bureau of Insular Affairs.....	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chaplains.....	118	.....	125	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Professors, U. S. Military Academy.....	9	.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cavalry.....	570	7,601	562	9,170	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Field Artillery.....	988	14,924	936	19,846	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Coast Artillery Corps.....	694	13,027	672	17,122	11	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Infantry.....	2,292	39,432	2,271	50,477	33	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Air Corps.....	1,226	14,719	1,223	15,640	9	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detached List.....	2,464	4,727	2,597	4,814	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total, less Philippine Scouts.....	11,979	118,727	12,069	146,826	211	18	1	1	4	39	25	8

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- (1) Includes 1 honorably discharged.
- (2) Operation U.S. Code 203, Title 18.

IX. DEFENSE AND ARMAMENT

LOSSES (Continued)																	
Enlisted Men																	
Discharged																	
Arm of Service	Retired	Expiration of service	Disability	By sentence of gen-eral court-martial	Fraudulent enlistment					Convenience of Government							
					Dependency concealed	Marriage concealed	Disability concealed	Prior service concealed	Criminal record concealed	To accept appointment as flying cadet	To accept commission	To accept ap-pointment as Warrant Officer	To enter U. S. Soldiers' Home	To enter U. S. Military Academy	To reenlist for foreign service or special detail	Completion of flying course	Disqualified as flying cadet
General Officers of the line.....																	
General Staff Corps.....																	
Army Staffs.....																	
Adjutant General's Department.....																	
Inspector General's Department.....																	
Judge Advocate General's Department.....																	
Quartermaster Corps.....	52	2,118	95	58	4	14	5	11	14			1	8		188		
Medical Department.....	22	1,503	127	55	2	7	4	5	19		4		1		165		
Finance Department.....	2	116		1											13		
Corps of Engineers.....	11	876	47	32		1	6	4	15				4		105		
Ordnance Department.....	25	466	24	10		1	3		2			1	2		71		
Signal Corps.....	8	684	22	7	3	4	3	4	4				1	2	80		
Chemical Warfare Service.....		88	13	3	2	2	3								4		
Bureau of Insular Affairs.....																	
Chaplains.....																	
Professors, U. S. Military Academy.....																	
Cavalry.....	41	1,984	73	85		8	11	5	29							165	
Field Artillery.....	27	3,153	251	127	6	27	25	15	78					2		352	
Coast Artillery Corps.....	81	2,081	320	87	6	37	34	27	67			1	11	13	37	200	
Infantry.....	152	8,775	715	316	10	81	112	50	203			2	13	23	826		
Air Corps.....	30	3,368	126	66		9	4	2	12		4	153	8	5	428	19	167
Detached List.....	90	1,492	25	8		1			1			4	4		58		
Total, less Philippine Scouts.....	541	26,704	1,838	855	31	192	207	119	448	4	157	9	76	82	2,655	19	167

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IX. DEFENSE AND ARMAMENT

Losses (Continued)																
Enlisted Men (Continued)																
Arm of Service	Discharged (Continued)						Died					Dropped, suspended sentence, G. C. M.	Total	Returned from desertion		
	Conv. of Gov. (Continued)		Dependency, Section 29, National Defense Act	Minority	Inaptness or undesirable habits or traits of character	Purchase	Sentenced to Imprisonment by Civil Court	Desertion	Of disease	Of accident	Drowned				Suicide	Homicide
	Returned from foreign service having less than one year to serve	Special cases														
General Officers of the line.																
General Staff Corps.																
Army Staffs.																
Adjutant General's Department.																
Inspector General's Department.																
Judge Advocate General's Department.																
Quartermaster Corps.	237		26	2	56	400	19	4	24	11	1	2	1	132	7	
Medical Department.	152	1	30	1	92	328	39	9	21	2	1	1	1	175	14	
Finance Department.						13	1		1							
Corps of Engineers.	226		12	2	20	141	18	10	7	4	2	2		128	9	
Ordnance Department.	64		6		12	72	3	2	4	3		2	1	23	28	
Signal Corps.	84		7		11	162	3		10	1	1	4		28	1	
Chemical Warfare Service.	25		4		6	10	1		2	1				8		
Bureau of Insular Affairs.																
Chaplains.																
Professors, U. S. Military Academy.																
Cavalry.	1		44	6	52	249	33	24	16	8	2	4	3	358	38	
Field Artillery.	559		137	18	125	424	85	22	27	27	3	6	2	788	68	
Coast Artillery Corps.	1,195		63	11	107	338	69	11	27	4	4	6	2	320	6	
Infantry.	1,573		166	28	472	1,243	197	58	98	50	5	14	6	1,425	165	
Air Corps.	457		40	7	48	778	42	9	20	47	1	4	2	130	3	
Detached List.			1		17	144	10	2	13	3	1	1		41	1	
Total, less Philippine Scouts.	4,573	1	536	75	1,018	4,302	520	151	270	161	22	46	18	3,556	312	

THE UNITED STATES ARMY

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IX. DEFENSE AND ARMAMENT

a fingerprint file totaling 5,584,334 prints, of which 389,717 were made prior to the World War, 3,961,467 during that war, and 1,233,150 since. Fingerprints pertaining to new enlistments are sent to the Federal Bureau of Investigation, Department of Justice, for clearance with a view to apprehending criminals who may seek refuge by enlisting in the Army.

Correspondence during the year aggregated a total of 2,994,671 pieces of mail. The largest number received for a single month was 216,448 in July, and the single-day maximum was 26,663. The Information Section received 47,405 telephone inquiries and 10,752 personal calls concerning 40,372 individuals and 17,785 of a varied nature.

STRENGTH OF THE REGULAR ARMY, BY CORPS AREAS

Corps Area, Department, or Country	July, 1935			June, 1936		
	Officers	Warrant Officers	Enlisted Men	Officers	Warrant Officers	Enlisted Men
First Corps Area.....	451	50	3,791	453	49	4,769
Second Corps Area ¹	1,121	94	13,029	1,217	87	14,518
Third Corps Area.....	1,930	106	11,783	1,806	106	12,556
Fourth Corps Area.....	1,225	57	12,544	1,205	55	15,255
Fifth Corps Area.....	558	52	4,679	583	50	6,150
Sixth Corps Area.....	565	49	5,629	585	45	6,933
Seventh Corps Area.....	976	50	7,528	890	48	9,025
Eighth Corps Area.....	1,700	110	21,716	1,659	98	25,480
Ninth Corps Area ²	1,134	107	12,894	1,081	99	14,752
Total in continental U. S.....	9,660	675	93,593	9,479	637	109,438
Hawaiian Department.....	737	50	13,952	739	51	17,912
Panama Canal Department ³	428	34	10,725	431	36	12,292
Alaska.....	9	.....	269	11	.....	378
Puerto Rico.....	51	6	818	51	4	817
Philippine Department:						
Regular Army ⁴	490	55	4,024	509	54	4,330
Philippine Scouts ⁵	55	.....	6,382	44	.....	6,386
China.....	44	2	657	41	2	798
Miscellaneous ⁶	609	.....	1,938	820	.....	861
Grand total ⁷	12,083	822	132,358	12,125	784	153,212

¹ Excludes Puerto Rico.

² Excludes Alaska.

³ Includes Panama Civil Government.

⁴ Includes officers on duty with the Military Adviser to the Commonwealth Government of the Philippine Islands.

⁵ Excludes officers of the Philippine Scouts attending schools or on leave in continental United States.

⁶ Includes military attachés, personnel on leave and en route to and from overseas garrisons.

⁷ Includes personnel of the retired list on active duty.

Decorations	AWARDS DURING FISCAL YEAR		Total to June 30, 1936
	Medal	Oak-Leaf Cluster	
Congressional Medal of Honor.....	1	.....	1,825
Distinguished Service Cross.....	18	1	6,465
Distinguished Service Medal ¹	3	1	2,133
Silver Star.....	715	113	10,546
Purple Heart.....	4,066	325	60,568
Soldier's Medal.....	12	.....	162
Distinguished Flying Cross.....	2	2	76
French Fourragere.....	64	.....	2,491

¹ Certain awards of this decoration are canceled when Distinguished Service Crosses are awarded which accounts for reductions in totals reported from year to year.

ADMINISTRATION OF VETERANS' AFFAIRS

Service Medals	Awards During Fiscal Year	Total to June 30, 1936
Civil War Campaign.....	141	2,036
Indian Campaign.....	43	2,245
Spanish Campaign.....	225	10,135
Philippines Congressional.....	61	6,718
Spanish War Service.....	422	25,787
Philippine Campaign.....	379	37,774
Army of Cuban Occupation.....	252	6,879
Puerto Rican Occupation.....	91	1,442
China Campaign.....	9	1,852
Army of Cuban Pacification.....	7	6,436
Mexican Service.....	41	16,915
Mexican Border Service.....	254	40,493
Victory Medal.....	4,669	1,303,234

During the past fiscal year the War Department approved 165 applications for the issuance of the Yangtze Service Medal (Navy), bringing the total of such approvals for Army personnel up to 607.

ADMINISTRATION OF VETERANS' AFFAIRS

BY FRANK T. HINES

ADMINISTRATOR, VETERANS ADMINISTRATION

ORGANIZATION

Administrator Frank T. Hines
 Executive Assistant to the Administrator Adelbert D. Hiller
 Assistant Administrator Harold W. Breining
 Assistant Administrator Omer W. Clark
 Assistant Administrator Gorge E. Ijams
 Solicitor James T. Brady
 Chairman, Board of Veterans Appeals John Garland Pollard

Public No. 536, 71st Congress, approved July 3, 1930, authorized the President to consolidate and coordinate, by executive order, governmental agencies affecting war veterans into an establishment to be known as the Veterans' Administration. On July 21, 1930, the President issued an executive order authorizing the consolidation of the United States Veterans' Bureau, the National Homes for Disabled Volunteer Soldiers, and the Bureau of Pensions. This consolidation resulted in a reorganization of the functional activities to the end that closely related services were grouped under the supervision of one responsible head designated as an assistant administrator.

As of June 30, 1936, the organiza-

tion of the Veterans' Administration was divided into six major units: office of the administrator; office of the assistant administrator in charge of finance and insurance; office of the assistant administrator in charge of compensation and pensions; office of the assistant administrator in charge of medical and domiciliary care and treatment, construction and supplies; office of the Solicitor in charge of legal activities; and Board of Veterans' Appeals.

PENSIONS, COMPENSATION AND RETIREMENT PAY

War of 1812.—Although more than 121 years have elapsed since the close of the War of 1812, two dependents of deceased veterans of this war were receiving pensions as of June 30, 1936; one, a widow, receiving \$50 a month under general law and one, a dependent daughter, receiving \$20 a month by a special act of Congress.

Mexican War.—As of June 30, 1936, the dependents of 247 deceased veterans of the Mexican War were carried on the pension rolls. Of this number, 232 awards were made through the application of general laws and 15 were based on special acts passed by Congress authorizing

IX. DEFENSE AND ARMAMENT

payment of pensions. The average monthly value of awards as of June 30, 1936 was as follows: general law cases \$49 and special act cases \$26. A comparison of the number of awards carried on the rolls as of June 30, 1935 and June 30, 1936 shows a net decrease of 47 during this period.

Indian Wars.—On June 30, 1936, pensions were being paid to 3,513 veterans who served in the several Indian Wars. Of this number 3,414 were awarded pensions through the application of general laws and 99 were in receipt of benefits as a direct result of special acts of Congress. The average monthly value of awards made to veterans of the Indian Wars as of June 30, 1936 was as follows: general law cases \$45 and special act claims \$18. A comparison of the number carried on the rolls as of June 30, 1935 and June 30, 1936 shows a net decrease of 386 during the fiscal year.

As of June 30, 1936, the dependents of 4,648 deceased veterans of the Indian Wars were in receipt of pensions. Of this number 4,561 had been awarded benefits of approximately \$30 per month under the provisions of general laws, and 87 were in receipt of approximately \$21 monthly by special acts of Congress. The total number of dependents of the 4,648 deceased veterans of the Indian Wars was 4,737 classified as follows: widows 4,623, children 108 and others 6.

Civil War.—Of the 2,213,365 men who served in the Union forces during the Civil War, which terminated 71 years ago, 9,664 veterans were in receipt of pensions as of June 30, 1936. The following itemization shows a distribution of the number on the rolls, by the acts of Congress authorizing payments, also the average monthly value of awards made under these laws:

Acts	No.	Value
June 9, 1930 (Age).....	4,738	\$ 75.00
June 9, 1930 (Age).....	11	85.00
June 9, 1930 (Helpless or blind)	4,796	100.00
June 9, 1930 (Helpless or blind)	7	110.00
General laws.....	21	84.00
Special acts.....	91	50.00

A comparison of the number carried on the rolls as of June 30, 1935 and June 30, 1936 shows a net decrease of 3,609 during this period.

On June 30, 1936, the dependents of 87,543 deceased veterans of the Civil War were carried on the pension rolls. This number represents a decrease of 12,747 during the fiscal year 1936. Of the 87,543 deceased veterans, the widows of 65,427 were in receipt of benefits valued at \$40 per month, as provided by the act of June 9, 1930, for widows of the attained age of 70 years; 2,180 widows were being paid \$50 monthly, as authorized by the act of July 3, 1926, for widows who were wives of veterans during their service in the Civil War; 1,323 widows were receiving an average of \$34 monthly under the provisions of general laws pertaining to the death of a veteran from causes due to military service; the dependents of 11,431 deceased veterans were receiving approximately \$30 per month per deceased veteran, under the act of May 1, 1920; and the dependents of 7,182 deceased veterans were receiving approximately \$36 per month per deceased veteran under the provisions of special acts of Congress. As of June 30, 1936, a total of 87,917 dependents were in receipt of pensions as a direct result of the service of 87,543 deceased veterans of the Civil War classified as follows: widows, 85,151, children, 1,274 and others, 1,492.

Spanish American War.—As of June 30, 1936, there were 179,169 veterans of the Spanish American War carried on the pension rolls of which 176,902 were receiving benefits for disabilities not of service origin, or for age; 2,072 for conditions determined to be the result of service; and 195 were special act cases. On June 30, 1936, the average monthly value of pensions awarded for non-service connected disabilities or for age was \$43.36; for service connected disabilities \$66.19; and by special acts of Congress \$23.09. An analysis of the service connected group by major disabilities shows the following distribution: tubercular ailments, 5%; neuropsychiatric diseases, 10%; and

ADMINISTRATION OF VETERANS' AFFAIRS

general medical and surgical conditions, 85%. In the non-service group 172,646 cases or 98% were receiving pensions because of disabilities and 4,256 or 2% by reason of age.

A comparison of the number of veterans carried on the rolls as of June 30, 1935 and June 30, 1936 shows a net increase of 11,277. This increase may be credited for the most part to the enactment of Public No. 269, 74th Congress, approved August 13, 1935. This amendatory legislation reenacted the laws in effect on March 19, 1933, and restored to the rolls those veterans dropped from the rolls as a result of the application of the provisions of Public No. 2 and Public No. 78, 73rd Congress. A study of the age of all Spanish American War veterans shows that 77% are between the ages of 55 and 65.

As of June 30, 1936, the dependents of 48,872 deceased veterans of the Spanish American War were receiving pensions having an average value of \$25 per month per deceased veteran. These dependents totaled 60,649 classified as follows: widows, 45,938; children, 13,898; and parents, 813.

Peace Time.—During the fiscal year ended June 30, 1936, the number of veterans on the pension roll who served in the armed forces of the United States during peace time decreased from 32,124 to 31,192 by reason of the application of Public No. 269 which restored a group of veterans receiving pensions at peace time rates to Spanish American War rates under the service pension law. Of the 31,192 peace time veterans, 845 were being paid an average of approximately \$17.36 per month under special acts of Congress. The average monthly award for all peace time veterans approximated \$18.96. Public No. 788, 74th Congress, approved June 24, 1936, increased the pensions of peace time veterans according to a rule which required restoration of pensions at three-fourths of the rates in effect March 19, 1933, but in no case to exceed three-fourths of the rates provided for war time service connected disabilities under Public No. 2, 73rd Congress. It is estimated that approximately 15,000 peace time vet-

erans will receive increased pensions under the provisions of this act.

As of June 30, 1936, pensions were being paid to the dependents of 7,505 deceased veterans whose death was determined to be the result of disease or injury originating in line of duty in the military or naval service in time of peace. Of this number, the dependents of 633 were receiving an average of \$26.92 per month per deceased veteran by special acts of Congress. The average value of all claims was approximately \$22 per month per deceased veteran. The dependents of these deceased veterans totaled 11,630 classified as follows: widows, 4,147; children, 4,067; and parents, 3,416.

WORLD WAR PENSIONS AND COMPENSATION

Veterans—Service Connected.—

As a result of a review of World War claims under Public No. 141, 73rd Congress, approved March 28, 1934, compensation was being paid on June 30, 1936 to 337,767 veterans suffering from disabilities directly or presumptively connected with service during the World War. Of this number, 251,654 were receiving payments under Public No. 141 and 86,113 under Public No. 2, 73rd Congress, approved Feb. 2, 1935. Of the group under Public No. 141, 225,164 were receiving payment at the full World War rates; 23,759 at 75% of the full rates, as presumptive cases; and 2,731 were being paid part at the full rate and part at 75% of the full rate, depending upon the service connection of two or more disabilities. Additional compensation was being paid to veterans on account of dependents in 60,367 cases in which the veteran was rated on a temporary basis, at an average of \$7.66 per case per month. The number of dependents for this group of veterans totaled 196,778 classified as follows: 56,033 wives, 136,802 children, and 3,943 parents. An analysis of the major disabilities of service connection for which compensation was being paid on June 30, 1936, shows the following distribution by type: neuropsychiatric diseases, 19.08%; tuberculosis

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17.20%, and general medical and surgical cases, 63.72%. The average monthly payments by type, based on the value of awards as of the above date, was as follows: neuropsychiatric diseases, \$51.13; tubercular ailments, \$54.04; and general medical and surgical cases, \$33.10. The average monthly payment for all types of disabilities was \$40.14. Of the total number of service connected veterans receiving compensation as of June 30, 1936, 2,491 reside outside the continental limits of the United States.

Veterans—Non Service.—At the close of the fiscal year 1936, there were 37,446 veterans of the World War receiving pensions for disabilities determined to be not in any way the result of their military service. The present rate for this group is \$30 per month unless reduced to \$6 per month by reason of receiving institutional care at Government expense and having no dependents. There is also an income limitation for the non-service group, no single person having an income of \$1,000 or more per annum and no person with dependents having an income of \$2,500 or more per annum being eligible. Out of 34,651 non-service veterans for whom an age distribution is shown, 269 or .78% were over 68 years of age; 638 or 1.84% were over 62 years of age; and 1,499 or 4.18% were over 55 years of age.

Emergency Officers.—On June 30, 1936, there were 1,835 emergency officers of the World War entitled to retirement pay. Of this number, 1,803 officers were receiving full payment. In the remaining 32 cases, there was a partial forfeiture in eight cases and a complete forfeiture in 24 cases. Section 212 of Public No. 212, 72nd Congress, approved June 30, 1932, provided that in case the salary of any retired officer (except those whose disability was incurred in combat with an enemy of the United States) in the employ of the Federal Government together with the retirement pay exceeds \$3,000 per annum, the retirement pay should be reduced or discontinued so that the sum of the two shall not exceed \$3,000. Four of the partial forfeitures

and 17 complete forfeitures were due to the above provisions. The other four partial forfeitures were because the beneficiary was receiving retirement pay as an enlisted man of the regular army. The other seven complete forfeitures were for various reasons, including active duty in the National Guard, the election of the beneficiary to receive disability compensation, disability compensation being the greater benefit, or estate being over \$1,500. The average monthly payment for officers receiving full time payment was \$136.82, based on the annual value of the roll at the close of the fiscal year.

Dependents—Service Connected.—On June 30, 1936, compensation was being paid to the dependents of 99,659 deceased veterans who died in service or as a result of diseases or injuries incurred directly or presumptively in service during the World War. The total dependents of the 99,659 deceased veterans were classified as follows: 27,512 widows, 39,948 children, and 83,377 parents. To June 30, 1936, death claims had been paid to dependents of 138,136 veterans who died as the result of service connected disabilities. An analysis of the 99,659 deceased veterans whose dependents were receiving compensation on June 30, 1936 shows that 31% died from tuberculosis, 27% from injuries, principally wounds, in action, and 24% from diseases of the respiratory system other than tuberculosis. A further study reveals that 40% of the deaths of service connected veterans occurred prior to July 2, 1921, the official ending date of the World War. At the close of the fiscal year 1936, the dependents of 6,613 deceased veterans, receiving this form of benefit, resided in the United States possessions and in foreign countries.

Dependents—Non-Service Connected.—Public No. 484, 73rd Congress, approved June 28, 1934, provided for the payment of compensation to the dependents of deceased veterans of the World War who died from a non-service connected disability, if the veteran before his death was rated or was entitled to a rating of 30% or more for a service con-

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nected disability. At the close of the fiscal year 1936, compensation for this type of benefit was being paid to the dependents of 2,994 deceased veterans, approximating \$29.71 per month per deceased veteran. An analysis of the 2,994 cases shows a total of 7,625 dependents, classified as follows: widows, 2,531; and children, 5,094.

TOTAL DISBURSEMENTS TO LIVING AND DECEASED VETERANS

The following table shows the number of living and deceased veterans on the rolls as of June 30, 1936, and the total disbursements during the fiscal year 1936, by wars:

Wars	On Roll June 30	Disbursements Fiscal Year 1936
Grand total.....	852,032	\$398,992,477.78
Living veterans....	600,562	299,000,808.47
Deceased veterans..	251,470	99,991,669.31
War of 1812		
Deceased veterans..	2	1,390.00
Mexican War		
Deceased veterans..	247	154,135.42
Indian Wars.....	8,161	3,749,528.00
Living veterans....	3,513	2,019,230.01
Deceased veterans..	4,648	1,730,297.99
Civil War.....	97,207	55,636,809.27
Living veterans....	9,664	12,298,487.29
Deceased veterans..	87,543	43,338,321.98
Spanish American War	228,041	108,584,105.11
Living veterans....	179,169	91,872,486.05
Deceased veterans..	48,872	16,711,619.06
Peace Time.....	38,697	9,710,465.11
Living veterans....	31,192	7,434,834.45
Deceased veterans..	7,505	2,275,630.66
World War.....	479,677	221,156,044.87
Living veterans		
Service connected	337,767	169,382,036.92
Non service connected.....	37,446	12,710,374.11
Emergency officers.....	1,811	3,283,359.64
Deceased veterans		
Service connected	99,659	34,542,723.57
Non service connected.....	2,994	1,237,550.63

HOSPITALIZATION

Remaining under Treatment.—

On June 30, 1936, the hospital load of the Veterans' Administration was 41,542 United States veterans, 52 veterans of countries allied with the United States in the World War, 241 employees of the Civil Conservation Corps and Works Progress Administration, and 40 miscellaneous beneficiaries. Approximately 11% of the

patients were under treatment for tuberculosis; 58% for neuropsychiatric diseases; and 31% for general medical and surgical conditions. An analysis of the 41,542 United States veterans remaining in hospitals shows the following: World War, 36,824; Spanish American War, 2,356; Civil War, 103; Peace time, 2,178; and other expeditions and occupations, 81. Of this group, 38,844 veterans were in facilities controlled by the Veterans' Administration, 1,856 in other government hospitals, and 842 in state or civil institutions. Over 61% of these patients are receiving treatment in facilities located in the State of their reported home address. There were 29,874 or 71.91% of the veterans under hospitalization as of June 30, 1936, receiving treatment for disabilities not of service origin and 11,668 or 28.09% were under treatment for diseases or injuries determined to be of service origin.

Admissions.—During the fiscal year 1936, 120,365 admissions of United States veterans were made to hospitals by the Veterans' Administration. Approximately 90% of the admissions were for non-service connected disabilities. There were 10,301 admissions authorized for the observation or treatment of pulmonary tuberculosis; 8,725 for psychotic or mental diseases; 10,109 for other neurological disorders; and 91,230 for general medical and surgical conditions. In addition to the United States veterans, there were 4,859 admissions of other patients, including 269 allied veterans, 4,222 employees of the Civilian Conservation Corps and Works Progress Administration, and 268 miscellaneous beneficiaries.

Discharges.—During the fiscal year 1936, 173,817 patients were under hospitalization, of whom 168,570 were United States veterans. Of the United States veterans treated, 127,028 were discharged after an average of 84.6 in-patient days. Approximately 76% of the United States veterans discharged during the fiscal year had been under treatment for general medical and surgical conditions; 16% for neuropsychiatric diseases; and 8% for pulmonary tuberculosis.

IX. DEFENSE AND ARMAMENT

Deaths.—During the fiscal year, deaths in hospitals totaled 8,465 or 6.7% of the discharges. Of this number, 5,193 or 61.35% occurred among patients under treatment for general conditions; 2,058 or 24.31% for pulmonary tuberculosis; and 1,214 or 14.34% for neuropsychiatric diseases. Of the 5,193 deaths among general patients, approximately 34% were caused by diseases of the circulatory system, including organic heart disease, and approximately 31% by malignant tumors and diseases of the digestive system.

DOMICILIARY CARE

Remaining.—On June 30, 1936, the veteran population reported as present in domiciliary status in facilities under the control and jurisdiction of the Veterans' Administration totaled 9,586, divided as to sex and color as follows: white males, 8,406; white females, 35; and colored males, 1,145. The total membership classified by wars shows that 18% were Civil War veterans; 10% were Spanish American War veterans; 84.21% were World War veterans; 38% were veterans of other wars, expeditions and occupations; and 5.23% were of peace time service in the regular establishments. 7,208 veterans remaining under domiciliary care were disabled by general medical and surgical conditions; 2,152 by neuropsychiatric diseases and 226 by tuberculosis. In conformity with the act of August 27, 1888, the Federal Government is required to reimburse state and territorial homes for disabled volunteer soldiers at the rate of \$120 per year for each person domiciled therein who is eligible for similar care in facilities controlled by the Veterans' Administration. During the fiscal year 1936 an average of 4,733 veterans were cared for in these homes, thereby creating an obligation of approximately \$567,960 on the part of the Federal Government.

Admissions and Discharges.—During the fiscal year 1936, 13,009 veterans were admitted for domiciliary care and 25,488 veterans were discharged after an average period of five months.

PHYSICAL EXAMINATIONS AND OUT-PATIENT TREATMENTS

Examinations.—During the fiscal year ended June 30, 1936, the field facilities of the Veterans' Administration made a total of 1,094,109 physical examinations for out-patient purposes, an increase of 208,760 over the number accomplished during the preceding fiscal year. Of the examinations made during the fiscal year 1936, 1,075,263 or 98% were medical and 18,846 or 2% were dental.

Treatments.—The number of treatments made during the fiscal year 1936 totaled 1,166,095, which number represents an increase of 361,689 over the experience during the preceding fiscal year. Of the total treatments 93% were medical and 7% were dental.

Dental Relief.—The value of dental service rendered to beneficiaries in clinics of the Veterans' Administration during the fiscal year, computed on a fee basis, was \$1,705,912.00 as compared with \$1,674,920.00 for the fiscal year 1935. The number of beneficiaries that received dental treatment during the fiscal year 1936 totaled 60,411, compared with 58,629 during the preceding fiscal year. Of the beneficiaries furnished dental treatment during the fiscal year 1936, 57,426 were in hospitalization or domiciliary care at the time service was rendered.

ADJUSTED COMPENSATION

As of June 30, 1936, there had been issued 3,757,259 adjusted service certificates, of which number 231,109 had matured on account of death, leaving 3,526,150 certificates in force on the above date. Payments of \$50 or less had been made to 165,184 veterans and cash settlements had been made to the beneficiaries of 135,615 veterans who died in service or before receiving adjusted service certificates. Immediately following the enactment of the Adjusted Compensation Payment Act, 1936, approved Jan. 27, 1936, forms were made available to holders of adjusted service certificates upon which to make application for settlement. Through cooperation with other government

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departments, procedure and forms were developed and plans were completed to permit certification of the amount due on adjusted service certificates by all facilities of the Veterans' Administration. By June 30, 1936, 3,264,016 applications had been received for settlement and of this number 3,227,829 or 98.9% had been certified to the Treasury Department and the remaining 36,187 applications were in process of certification. The face value of the adjusted service certificates upon which certification had been completed was \$3,206,434,462, while the total amount certified as payable after deducting outstanding liens was \$1,764,847,-665.88.

INSURANCE

Government Life (Converted).—

At the close of the fiscal year, there were 593,064 Government Life (converted) insurance policies in force, aggregating \$2,590,482,279 of insurance. During the fiscal year, 23,178 new policies were issued and 6,988 policies were surrendered for cash. Premiums from Government life insurance, interest from policy loans, interest from all investments, etc., are deposited to the credit of the Government life insurance fund from which are paid claims on account of total permanent disability and death,

dividends and refunds. This fund is a trust fund kept by the United States Treasury separate and apart from other Government monies and is not available for the payment of administrative costs of operating the insurance activity.

Term and Automatic Insurance.

—On June 30, 1936, monthly installments of term insurance were being paid to 12,452 permanently and totally disabled veterans and to the beneficiaries of 122,974 deceased veterans. An analysis of the disabilities for which term insurance was being paid on June 30, 1936, shows 47.57% of the awards made were for neuropsychiatric diseases, 26.20% for tuberculosis, and 26.23% for general medical and surgical conditions. Payments of automatic insurance (provided for those who were permanently and totally disabled or who died within 120 days after entering service and before making application for term insurance) are being made to 305 veterans and to the beneficiaries of 6,861 diseased veterans.

FINANCE

During the fiscal year, the total net disbursements made by the Veterans' Administration from all appropriations and trust funds, including adjustments on lapsed appropriations, were as follows:

Appropriation	Disbursements.
Salaries and expense.....	\$ 83,056,111.31 ^b
Printing and binding.....	124,568.20
Hospital and domiciliary facilities and services, Veterans' Administration.	1,933,263.04 ^c
National Industrial Recovery, Veterans' Administration 1933-37.....	1,004,575.71
Army and Navy pensions and military and naval compensation.....	399,009,852.78
Military and Naval insurance.....	94,024,981.15
Adjusted service and dependent pay.....	1,089,821.20
Vocational rehabilitation.....	-6,267.25 ^a
Military and Naval family allowance.....	-538.90 ^a
Miscellaneous.....	12,712.22
Trust Funds	
United States Government life insurance fund.....	28,296,446.29 ^d
Adjusted service certificates.....	3,228,421,888.82 ^c
Army allotments.....	-94.68 ^a
General Post fund.....	170,525.63
Funds due incompetent beneficiaries.....	168,468.08
Personal funds of patients, Veterans' Administration.....	1,814,112.47
Total.....	\$3,839,120,426.07 }

^a Credits.

^b Includes net disbursements of \$680,684.69 from allotments made to other Government agencies for the care and treatment of veterans, for emergency relief, and to the Treasury Department and Civil Service Commission for activities transferred thereto.

^c Includes \$43,759.12 for emergency relief.

^d Includes encumbrances.

^e Represents total payments to veterans and beneficiaries on adjusted service certificates, including loans to the value of \$1,441,586,796.12 made in this and prior fiscal years, but does not include interest aggregating \$235,213,935.13 forgiven as a result of settlements effected under the provisions of the Adjusted Service Payment Act, 1936.

IX. DEFENSE AND ARMAMENT WATERWAYS AND HARBORS

By E. M. MARKHAM

MAJOR GENERAL, U. S. A.; CHIEF OF ENGINEERS, WAR DEPARTMENT

INLAND WATERWAYS

Location and Description.—The principal systems are the Great Lakes, together with the New York State Barge Canal and the Hudson River, the Mississippi system, including the Mississippi, Missouri, Ohio, the Illinois Waterway to Chicago; the rivers of the Atlantic Coast including the intracoastal waterway system connecting these rivers; the rivers of the Gulf Coast; an inland waterway extending from Apalachicola River in Florida, *via* Mobile, New Orleans, and Galveston, down the Texas coast to Corpus Christi, connecting with southern Georgia, Alabama, Mississippi, Louisiana, and Texas waterways, and with the Mississippi River system; the San Joaquin-Sacramento system in California; the Columbia system in the northwest, and the smaller Pacific Coast rivers.

Channel Depths.—The Great Lakes, which are really inland waterway systems, have natural deep water navigation except in the connecting channels. From Lake Superior to Lake Ontario, these connecting channels have been artificially deepened where necessary to accommodate a draft of 24 feet. The more important harbors have depths of from 20 to 24 feet. The 12-foot New York State Barge Canal is being deepened to 14 feet from the Hudson River to Oswego. The intracoastal waterway system between Trenton on the Delaware River and Wilmington, N. C., on the Cape Fear River has been completed to project depths of not less than 12 feet, while between Wilmington and Miami project depths of 7, 8, and 10 feet have been secured, the last remaining uncompleted section between Little River and Winyah Bay in South Carolina having been opened to through navigation early in 1936. Deepening of the Chesapeake and Delaware Canal to 27 feet is now in progress. Along

the Gulf Coast, projects have been adopted to provide channels 9 and 10 feet deep between Apalachicola River and Corpus Christi, Texas, and these depths are available from Pensacola to Galveston. The Mississippi has a 9-foot depth from Baton Rouge to St. Louis, and work is being actively prosecuted and well advanced by the construction of a series of 26 locks and dams to secure a 9-foot channel thence to Minneapolis. The Illinois Waterway now has an available 9-foot channel from the Mississippi River to Chicago, and the Sacramento River a 10-foot channel to Sacramento.

Status of Waterway Transportation.—Inland waterway transportation has in recent years shown a pronounced increase except during the period of acute depression. Even then, the loss in tonnage was small in comparison with other methods of transportation, and a sustained increase in total tonnage has occurred each year since the low year of 1932. This increase, amounting in the calendar year 1935 to more than 110,000,000 tons over 1932, indicates a realization on the part of shipping interests that where suitable conditions as to the character of traffic, origin, and destination exist with respect to waterways, water transportation is inherently cheaper than any other form.

Improvement of New Waterway Projects.—At the close of the fiscal year 1936, there were substantially 1,000 authorized river and harbor projects in force, active operations having been carried out on 337 of these projects. Total funds made available to the Army Engineers by the Federal Emergency Administration of Public Works for application to river and harbor and flood control projects to Nov. 15, 1936, amounted to \$348,547,183. Also on Nov. 15, 1936, a total of \$145,311,864 had been allocated under the Emergency Relief

WATERWAYS AND HARBORS

Appropriation acts of 1935 and 1936 for river and harbor and flood control works. These funds were in addition to annual appropriations by Congress for the maintenance of existing river and harbor works, and for flood control on the Mississippi and Sacramento Rivers, which for the current fiscal year have totaled \$176,178,008. The expenditure of these funds has provided direct and indirect employment to approximately 200,000 persons resulting in a substantial contribution to the relief of unemployment, as well as materially advancing the development of our national waterways for navigation and the control of floods.

Great Lakes.—The improvement of Great Lakes harbors and channels has been carried out during the past fiscal year at Ogdensburg, Rochester, Niagara River, Black Rock Channel and Tonawanda, Buffalo, Conneaut, Ashtabula, Fairport, Cleveland, Sandusky, Toledo, Monroe, Rouge River, Detroit River, channels in Lake St. Clair, St. Clair River, channel between Mackinac Island and Round Island, Indiana Harbor, Calumet River and Harbor, Kenosha, Kewaunee, Green Bay, Keweenaw Waterway, Ashland, and Duluth-Superior Harbor.

Intracoastal Waterways.—With funds provided in part under the public Works and Emergency Relief programs, widening and deepening to 32 feet of the Cape Cod Canal has been actively prosecuted, two high level highway bridges and a modern vertical lift railroad bridge have been constructed and the project as a whole is about 50% completed. A continuous protected waterway along the Atlantic Coast from Trenton on the Delaware River to Miami, Fla., 1,435 miles, with depths from 7 to 12 feet, has been fully completed during the past year, affording a safe passage to vessels of moderate draft, not suited for open sea voyages, bound to and from Florida, as well as vessels engaged in local coastwise trade. Extension of the waterway 7 feet deep southerly from Miami 63 miles to Key Largo has been approved. Preliminary work on the construction of

a ship canal 30 feet in depth across Florida from Jacksonville to Port Inglis on the Gulf of Mexico, inaugurated in September, 1935, was suspended pending further appropriations. Along the Gulf Coast an inland protected waterway has been completed, or planned, from Apalachicola River in Florida to Corpus Christi in Texas, a total distance of 951 miles, the project depth east of New Orleans being 9 feet at mean low water, except from Mobile Bay to Grand Island Pass where the depth is 10 feet, these depths being available for navigation from Pensacola to New Orleans. Eastward from Pensacola dredging is now in progress. From the Mississippi River the waterway has been completed to Galveston. Dredging southwesterly from Galveston to Corpus Christi, about 200 miles, will be undertaken when the rights-of-way are furnished by local interests as required by Congress.

Mississippi River System.—The Mississippi River projects provide for 9-foot navigation from Baton Rouge to Minneapolis. Ocean shipping goes to Baton Rouge. Of the 26 locks and dams required for canalization above St. Louis, 19 locks and 9 dams have been completed and 7 locks and 16 dams were under construction, this project having been about 60% completed at the end of November, 1936. On the Tennessee River the 9-foot navigation project was advanced by completion of a lock at the Joe Wheeler Dam. This dam, together with locks and dams at Pickwick Landing, Gunterville, and Chickamauga, were under construction by the Tennessee Valley Authority. On the Missouri River a 6-foot channel was opened to traffic up to St. Joseph, 85 miles above Kansas City, and work was under way for its continuance to Sioux City. To provide an additional water supply during the low water season, a large hydraulic fill earth dam about 250 feet high, which when completed will be the largest earth dam in the world, was under construction at Fort Peck, Mont., with a reservoir capacity of more than 19 million acre feet. New

IX. DEFENSE AND ARMAMENT

locks and dams have been constructed at London and Marmet and work was in progress and nearing completion on locks and dams at Winfield, W. Va., on the Kanawha River, and at Gallipolis, Ohio, on the Ohio River, replacing old locks and dams Nos. 2-11 on the Kanawha and Nos. 24-26 on the Ohio. A new lock and dam has been placed in operation at Montgomery Island, on the Ohio 32 miles below Pittsburgh, replacing old locks and dams Nos. 4, 5, and 6. The Emsworth Dam near Pittsburgh is being raised to afford better navigation facilities. Construction of a new lock and dam No. 9 on the Allegheny is well advanced to extend 9-foot navigation to East Brady, Pa., 72 miles above Pittsburgh.

Under the provisions of the National Industrial Recovery Act a system of 14 flood control reservoirs was about 60% completed by the Army Engineers in the Muskingum Valley in Eastern Ohio. The work was carried out under an allotment of \$25,590,000 from Public Works funds. The Muskingum Watershed Conservancy District has agreed to make available or expend an additional \$12,000,000 for related work on the project.

Columbia River System.—The Columbia River system has been improved to provide ocean-going vessels access to Portland, Oreg., and Vancouver, Wash. A combination navigation and power dam, with a lock which will permit ocean-going vessels to ascend the Columbia River to The Dalles, was under construction at Bonneville, Oreg., about 40 miles east of Portland. This dam may ultimately develop 516,000 kilowatts.

Ports.—The maximum depth that has been provided in harbor channels is 40 feet at mean low water except in the channel through the outer bar at San Francisco, where a depth of 50 feet has been authorized to afford safe navigation to deep draft vessels in the heavy swells there encountered. A depth of 40 feet has been afforded at New York Harbor and other ports of primary importance to the Navy. Anchorage facil-

ities at Boston Harbor have been increased and work of deepening to 40 feet and enlarging the main ship channel was being prosecuted. Material improvements have been made in the interior and connecting channels in New York Harbor and additional anchorage space provided. The 25-foot channel in the Delaware River between Philadelphia and Trenton was nearly completed; a 30-foot channel through Beaufort Inlet to the marine terminals at Morehead City Harbor; and deepening of the main entrance channel at Miami, Fla., to 30 feet for a width of 200 feet have been completed.

On the Gulf Coast, improved facilities have been provided at Tampa, Pensacola, and Panama City, Fla., Mobile, Ala., Freeport and Port Aransas, Tex. The Houston Ship Channel, providing deep-draft navigation to the large oil shipping port of Houston, and the Sabine-Neches Waterway providing navigation facilities for the ports of Port Arthur, Beaumont, and Orange, have been and are being deepened to 34 and 32 feet. A 25-foot jettied channel has been dredged at Brazos Island Harbor, which together with interior channels provide access to new terminals at Port Isabel and Brownsville, Texas. On the Pacific Coast material improvements have been made at San Diego, Los Angeles, San Francisco, Stockton, Olympia, Tacoma and Seattle, and extensive jetty repairs were being carried out at the mouth of the Columbia River and at Grays Harbor, Wash. Increased navigation facilities have also been provided at Honolulu, Port Allen and Kaunakakai in the Hawaiian Islands.

Surveys.—The survey of the principal streams of the United States, some 200 in number, has been practically completed by the Army Engineers for the formulation of general plans for improvement for navigation, in combination with the most efficient development of potential water power, the control of floods, and the needs of irrigation. A vast amount of data has been secured which will be extremely valuable in

WATERWAYS AND HARBORS

the future improvement of our inland streams.

MISSISSIPPI RIVER FLOOD CONTROL

On June 15, 1936, the President signed an Act amending the Mississippi River flood control act of May 15, 1928. The amendment retains the purposes and the completed features of the 1928 act, now over 90 per cent completed, and authorizes an additional \$272,000,000 for extension of flood control work in the alluvial valley of the Mississippi River from Cape Girardeau, Missouri, to the Gulf of Mexico, including the St. Francis, Yazoo, Tensas and Atchafalaya Basins, as well as the alluvial lands around Lake Pontchartrain for protection against the maximum predicted flood. North of the Arkansas River, floods will be confined generally to the main leveed channel, a limited area in the St. Francis Basin, and the city of Cairo, Ill., being given additional protection by the New Madrid floodway. South of the Arkansas River, flood waters, in excess of what the leveed channel of the main river will carry safely, will find their way to the Gulf through floodways west of the river. New Orleans has been given additional protection by the Bonnet Carre spillway 33 miles above the city emptying into Lake Pontchartrain. In addition to levee work, the project includes construction of revetments and regulating works to prevent bank caving and to stabilize the channel in the interest of navigation.

The project as amended substitutes the Eudora floodway through the Macon Basin and a back protection levee extending from the head of this floodway north to Arkansas River. South of Red River it provides for construction of the Morganza floodway extending from the Mississippi River north of Morganza into the Atchafalaya floodway south of Krotz Springs. The amended project includes a six-year program for the improvement and regularization of the Mississippi River and for the improvement of the discharge capacity of the Atchafalaya River

and of its outlets as well as the construction of an additional outlet to the Gulf of Mexico, west of Berwick, La. Flood control projects for the St. Francis and Yazoo Rivers to protect from overflow by these rivers certain alluvial lands that have been protected from overflow by the Mississippi River are now included in the project for the Alluvial Valley of the Mississippi.

FLOOD CONTROL ACT OF JUNE 22, 1936

The general flood control act of June 22, 1936, establishes for the first time in the history of the Federal Government a definite flood control policy which provides for participation in the construction of economically justified flood control projects throughout the United States, in cooperation with the States, political subdivisions thereof, or other local interests. Under the conditions of cooperation, Federal funds appropriated for the execution of the projects may not be applied to the costs of lands, easements, and rights-of-way necessary for the construction of the project, except when such costs exceed 50% of the total cost. The act authorized the construction of approximately 270 flood control projects, having a total estimated construction cost of about \$300,000,000. The projects are located in 31 States and affect almost every State in the Union. The act also authorized preliminary examinations and surveys for flood control in some 220 localities, and continuation of surveys and studies of some 18 reservoir sites.

PORT FACILITIES

New England.—During the past year dock and terminal facilities at United States ports have been extensively improved. A few of the more important of these facilities are enumerated to illustrate the continued effort of localities in various sections of the country to keep pace with the needs of water transportation. The municipal fish pier at New Bedford, Mass., was extended to provide more space for the sea fishing fleet. A general remodeling program has been carried out in Boston.

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An additional coal plant was constructed at Providence, R. I., with modern handling facilities, and a coal handling terminal and facilities for handling bulk cargo provided at New Haven, Conn.

Middle Atlantic States.—A two-story administration building was erected and a 10-ton traveling bridge crane for discharging cargo into vessels was installed at the port of Albany, N. Y. At New York several new pier and bulkhead sheds were completed on the North River and contracts were awarded for the construction of additional piers. Coal handling plants were completed on the Harlem River and Newton Creek, and new oil storage terminals constructed within the port. The work at Beckett Street terminal, Camden, N. J., to provide three new cargo buildings, loading platforms, drive-ways, and railroad trackage was well advanced, and at Marcus Hook plans were completed for an extension to the present pier of the Sinclair Refining Co. to enable the berthing of two large tankers. A municipal ocean terminal with 1,450 linear feet of berthing space and a transit shed with 416,000 cubic feet of storage space, was constructed at Morehead City, N. C., and private interests completed a fish processing plant.

The South.—At Fayetteville, N. C., a 10-ton unloading crane was installed at the municipal terminal and a terminal with a capacity of 87,000 barrels of gasoline was constructed. Additional oil tanks were erected at Wilmington, N. C., which brought the total storage capacity of the port up to approximately 1,166,500 barrels. At Charleston, S. C., the construction of a factory for the manufacture of paper products was started on a portion of the port terminal property, several new terminals were constructed, including a fertilizer terminal, and an oil dock with pipe line. Savannah, Ga., now has completed the \$4,000,000 paper manufacturing plant which uses about 300 cords of wood per day for the manufacture of kraft paper and another unit to this plant is under construction which will more than dou-

ble its present production capacity. Four oil storage tanks were installed with a capacity of 175,000 barrels. At the port of Brunswick a shrimp packing plant was completed and a crab packing plant, with an output of about 600 barrels of raw crabs per day, was under construction. A prawn packing plant was constructed at Fernandina, Fla. Minor additions to existing terminal facilities were made at Jacksonville. At Fort Pierce Harbor, Fla., a citrus packing plant was built, and another was under construction. The Florida East Coast Railway constructed a new railway car ferry terminal at Port Everglades to accommodate the car ferry service between Florida and Cuba and provided 7,000 feet of track for connection with the main line of the Port Everglades Belt Line Railroad. Oil companies constructed six new steel storage tanks for bulk petroleum products. New wharves and bulkheads were constructed by private interests in Miami, a 1,000-ton capacity marine railway was installed, and plans were made for extensive improvements to the municipal terminals. A sectional type dry dock with a lifting capacity of 10,000 long tons was constructed at Tampa and a mooring basin and mooring pier were under construction. Two 55,000 barrel oil storage tanks and a wharf 35 feet by 400 feet long were constructed. New elevating machinery was installed, increasing the phosphate loading capacity in one of the elevators from 400 to 1,200 tons per hour. A metal warehouse was built, and work was begun on the development of a combined land and sea-plane base.

Gulf of Mexico.—The Alabama State Docks Commission of Mobile constructed a reinforced concrete marginal wharf 500 feet long as an adjunct to the 500,000 cubic foot capacity cold storage plant now under construction. The City of Gulfport, Miss., has constructed a municipal wharf 1,800 feet long with a modern concrete warehouse 1,800 by 120 feet. At Panama City a bulkhead approximately 650 feet long was constructed with T-head wharf, 160

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by 40 feet, which together with a basin extending out to the 29 foot contour in St. Andrews Bay serves a tank farm on shore. Two 64,000-barrel storage tanks for crude petroleum and a loading wharf for ocean-going tankers were constructed at Pilottown, La., on the Mississippi River 93 miles below New Orleans, La. A 6-inch pipe line $8\frac{3}{4}$ miles long connects the terminal with the oil field in the Garden Island Bay section of the Mississippi delta. An oil loading wharf was built on the Calcasieu River at Lake Charles, La., for ocean-going tankers and barges. Cotton warehouses which will increase the storage capacity by 15,000 bales of cotton are under construction at Galveston. At Houston the port authorities installed a car hopper, belt conveyor system, and discharge chute for outbound movement of bulk commodities, and a wharf, 300 feet long was constructed five miles below the turning basin, to serve a pulp plant being constructed adjacent to the wharf. Private interests at Corpus Christi constructed a wharf and warehouse with two slips at Avery Point, and the port authorities constructed an oil loading terminal near the Corpus Christi Turning Basin. Terminal facilities at Point Isabel, were increased during the year, and now consist of a steel sheet pile bulkhead 546 feet long; two warehouses, each 100 feet by 200 feet; an oil dock; and a 50,000-bushel grain elevator. A pre-cooling plant is under construction. At Brownsville, Texas, 1,200 feet of reinforced concrete wharf were constructed with storage sheds. There is also an oil dock capable of berthing 1 ship.

California.—On the Pacific Coast an oil refinery was built two miles below the General Cargo Terminal at Stockton, consisting of storage buildings, tanks, and distillation equipment. Wharf and Transit Shed No. 1 were completed, and six new warehouses were built, providing 90,000 square feet of cargo space. An addition was made to the cotton compress and additional wharves were also provided at the port. The Port Authorities of Los Angeles under-

took construction work on a marine passenger and cargo terminal; a banana terminal consisting of a wharf 598 feet long and 35 feet wide, with gantries for unloading bananas; approach ramps and an open storage area at Berth 178; extension to the Municipal Belt Line Railroad, including an interlocker plant, and the construction of Reeves Field airport. Private interests of Newport Beach, Calif., completed considerable dredging of channels and constructed 25 small private piers with landing floats, also yacht slips which will accommodate 100 yachts. At San Francisco the work of extending Pier 42 from 795 to 935 feet, including a transit shed, was completed early in the year. A flush railroad track was constructed on the south side of the pier and three adjustable cargo aprons installed to permit side-port operations. A new two-story bulkhead building, 40 feet wide and 455 feet long, was built across the ends of Piers 38 and 40 and the intervening slip; a new steel car ferry apron carrying three railroad tracks was installed on Pier 43; the main tracks of the Belt Line Railroad were extended to connect with the trackage serving Piers 48, 50, and 54; work was begun on the replacement of the bulkhead wharf at Piers 44 and 46 and on a bulkhead wharf and wharf shed between Piers 24 and 226. Outer harbor work was in progress at Oakland to extend the principal outer wharf to afford berthing space of 5,989 feet. An 840-foot bulkhead wall was constructed easterly from this wharf. The Port Commission installed a 40-ton motor truck scale, with a 60-foot platform, capable of weighing truck and trailer in one operation. In the inner harbor at Oakland, a new wharf and transit shed was completed at the Encinal Terminals, Alameda. The total berthing space at this terminal is now 2,800 feet and the area for covered storage is 197,000 square feet.

Northwest.—At Vancouver, Wash., a contract was placed for construction of a terminal with a water frontage of 862 feet, a warehouse 740 feet by 120 feet, a marine elevator, and

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railway connections. Willapa Harbor, Wash., has constructed a log boom for the sorting and storage of logs to be exported to China and Japan, and a 400-foot wharf was built. Pier No. 1 at Grays Harbor, Wash., was reconstructed and a new plant constructed at the mouth of Hoquiam River for the conversion of logs into pulp wood. The Port Commission at Olympia Harbor, Wash., added 18,720 square feet to transit storage shed B, reconstructed 700 feet of wharf, and rearranged storage and shipside tracks. At Tacoma the Port Commission built a clear span warehouse having a storage area of 34,000 square feet. The warehouse is under lease to be used for the grading, bundling and transit storage of export plywood. Pier "B" of the Pacific Coast Railroad Co. at Seattle, Wash., was extended to 167,000 square feet and the shed storage area to 120,400 square feet; the Port Commission made extensive repairs, additions and improvements to its facilities, including the construction of a wharf with an area of 7,200 square feet, and a two-story warehouse with 5,100 square feet of floor space designed for handling fresh fish. At Everett a 100-foot extension was made to a lumber wharf and a crane was installed for unloading pulp chips and hogged fuel in connection with the conversion of a sawmill to a plant for manufacturing wood pulp. Other Pacific Coast ports made needed improvements to facilities, and handling equipment of various types was installed which will greatly facilitate the movement of cargo.

Great Lakes.—On the Great Lakes

terminal improvements have included installation of a marine leg at one of the elevators in Duluth-Superior Harbor which has a capacity of 15,000 bushels of grain per hour; enlargement of a cement storage plant at Carrollton, Michigan, by building a battery of 6 reinforced concrete silos increasing the storage capacity to 71,000 barrels and a packing machine to take care of the additional volume; and 450 feet of railroad siding built to increase the railroad loading facilities. A new terminal and 800-foot dock was completed on the Detroit River at Detroit, Mich., with a parking yard, and terminal warehouse, the principal commodities handled being automobiles and package freight. At Huron, Ohio, 1,457 linear feet of cellular steel sheet piling dock frontage was completed along the easterly side of the Huron River, and at Cleveland a dock was completed for handling steel products. The sand dock at Erie was extended by construction of a steel sheet pile bulkhead; the Pennsylvania Railroad dock destroyed by fire in 1935 was rebuilt with a new warehouse, and mooring facilities were provided for vessels while unloading petroleum products.

INLAND WATERWAY COMMERCE

Inland Waterways Improved by the Government.—The following table shows freight traffic for 1935 of waterways under improvement by the Federal Government, excluding short deep stretches of rivers (like the lower Hudson and Delaware), which are really approaches to ports:

Waterways	Short Tons	Value
Hudson River.....	8,524,327	\$ 266,454,276
Delaware R., above Philadelphia.....	2,786,828	15,744,347
Chesapeake-Delaware Canal.....	1,061,207	47,255,478
Waterway from Norfolk, Va., to the Sounds of North Carolina.....	233,106	6,303,051
St. Johns R., above Jacksonville.....	229,952	7,155,077
All others, Atlantic Coast.....	16,403,078	537,547,605
<hr/>		
Tombigbee-Warrior System.....	1,144,364	27,722,905
Southern Louisiana Waterways (excluding Mississippi River) ..	4,434,557	53,969,664
All others, Gulf Coast.....	33,980,983	432,991,108
<hr/>		
San Joaquin R.	1,052,835	45,474,260
Sacramento R.	805,771	36,257,865
Columbia R. and Lower Willamette below Vancouver and Portland (excluding ocean commerce).....	5,908,593	51,765,998
All others, Pacific Coast.....	11,943,556	87,732,469

WATERWAYS AND HARBORS

Waterways	Short Tons	Value
Mississippi R., Minneapolis to Passes.....	25,037,907	\$ 940,444,875
Ohio River.....	20,976,708	286,402,041
Monongahela R.	17,940,832	87,601,507
Allegheny R.	3,375,478	12,965,205
Kanawha R.	2,204,770	10,888,631
All others, Mississippi System.....	8,356,188	135,239,349
All others in the United States.....	76,191,660	1,087,023,118
TOTAL.....	242,592,700	4,176,938,829

Other Inland Waterways.—The following is for internal waterways | other than those under improvement by the Federal Government:

Waterways	Short Tons	Value
New York State Barge Canal.....	4,489,172	\$ 280,479,536
Lehigh and Delaware Division Canals, Pa.	110,871	124,176
Chicago Sanitary Drainage Canal ¹		
New Basin Canal, La.	112,006	2,007,903
All others of record.....	1,256,477	114,760,785
TOTAL.....	5,968,526	397,372,400
GRAND TOTAL, corrected for duplications because of commerce moving over two or more waterways.....	225,918,000	\$4,286,973,000

¹ Now part of Federal Illinois Waterway.

NET TOTAL INLAND WATERWAY COMMERCE 1926-1935

Year	Short Tons	Value
1926.....	217,000,000	\$3,680,000,000
1927.....	219,000,000	3,930,000,000
1928.....	227,300,000	3,838,000,000
1929.....	245,894,000	3,871,300,000
1930.....	226,760,000	3,557,000,000
1931.....	179,735,000	2,816,463,000
1932.....	151,276,000	2,589,992,000
1933.....	182,965,000	3,088,615,000
1934.....	194,786,000	3,463,331,000
1935.....	225,918,000	4,286,973,000

COASTWISE COMMERCE (including Intercoastal)

Port	Tonnage Both Ways	Value
Portland, Me.	2,407,435	\$ 46,438,411
Boston, Mass.	12,482,656	411,393,640
Providence, R. I. . .	4,575,678	425,276,767
New York, N. Y. . .	33,393,482	2,117,735,396
Philadelphia, Pa. . .	20,200,556	647,401,799
Baltimore, Md. . .	6,320,965	281,000,435
Norfolk-Newport News, Va.	18,739,965	560,502,858
All others, Atlantic Coast.....	19,892,817	961,042,096
New Orleans, La. . .	6,115,279	251,094,331
Galveston, Hous- ton, Texas City, Tex.	19,499,405	462,444,382
The Sabine ports..	25,940,966	283,050,829

All others, Gulf Coast.....	11,022,364	\$201,765,313
Los Angeles, Calif. San Francisco Bay & Harbor, Calif.	9,003,460	629,131,046
Portland, Oregon . .	14,761,199	690,066,946
Tacoma, Wash. . .	4,010,146	219,622,145
Seattle, Wash. . .	1,352,850	60,642,353
All others, Pacific Coast.....	4,658,423	269,646,508
Ports of Hawaii... .	11,260,969	232,457,360
Ports of Alaska... .	3,723,473	233,716,485
Ports of Puerto Rico.....	357,016	46,870,080
	1,164,516	111,667,869
TOTAL, all ports	230,883,620	\$9,142,967,049

TOTAL, ALL PORTS,
corrected for du-
plications of re-
ceipts and ship-
ments..... 115,441,810 \$4,571,483,525

COMMERCE THROUGH THE PANAMA CANAL

Fiscal Year	Intercoastal ¹ (Short tons)	Total (Short tons)
1927.....	11,365,592	31,078,000
1928.....	10,833,443	33,186,394
1929.....	11,084,212	34,342,567
1930.....	11,174,429	33,633,860
1931.....	9,862,020	28,092,736
1932.....	7,417,742	22,184,958
1933.....	7,197,801	20,280,655
1934.....	9,877,602	27,684,889
1935.....	8,919,019	28,346,670
1936.....	8,645,364	29,686,562

¹ Included in coastwise figures.

FOREIGN AND DOMESTIC COMMERCE OF PORTS DURING THE CALENDAR YEAR 1935

(Short tons)

	FOREIGN			DOMESTIC		GRAND TOTAL	
	Imports		Exports	Tons	Value	Tons	Value
	Tons	Value	Tons				
Atlantic Coast.....	26,175,210	\$3,697,489,627	10,462,998	224,986,061	\$10,651,953,523	261,624,269	\$15,980,340,375
Gulf Coast.....	4,649,043	156,632,265	13,507,863	73,119,118	1,507,448,291	91,276,024	2,228,911,827
Pacific Coast.....	3,118,169	266,404,004	9,951,058	76,745,563	2,760,352,496	89,814,790	3,326,025,542
Great Lakes.....	4,716,186	136,449,920	9,058,980	173,103,796	2,616,258,673	186,878,962	2,812,765,728
Grand total, unadjusted....	38,658,608	4,256,975,816	42,980,899	547,954,538	17,536,012,983	629,594,045	24,357,043,472
Adjusted total, eliminating all known duplications.....	38,658,608	4,256,975,816	42,980,899	311,492,878	9,991,179,649	393,132,385	16,812,210,138

Total commerce of the United States, 1935: Adjusted total, 453,331,000 tons; \$16,889,000,000 value.

OPERATIONS OF UNITED STATES NAVAL FORCES

OPERATIONS OF UNITED STATES NAVAL FORCES

By WILLIAM S. PYE

REAR ADMIRAL, U.S.N.; ASSISTANT CHIEF OF NAVAL OPERATIONS

EMPLOYMENT OF NAVAL FORCES

Basic Policy.—During the fiscal year ended June 30, 1936, the operations of the Navy were conducted in conformity with the basic policy enunciated on May 10, 1933, and in such manner as to maintain the purposes of this policy with the maximum efficiency and economy within the appropriations made available. The fundamental statement of the policy referred to is as follows: "To maintain the Navy in sufficient strength to support the national policies and commerce, and to guard the continental and overseas possessions of the United States."

Objectives.—The employment of the forces available has been directed toward support of the policy through accomplishment of the following contributory objectives: (a) To exercise and train the units of the fleet to the highest state of efficiency; (b) to organize the Navy for operations in either or both oceans so that expansion only will be necessary in case of national emergency; (c) to protect American lives and interests in disturbed areas; (d) to cooperate fully with other departments of the government and with the States; (e) to cultivate friendly international relations; and (f) to encourage civil industries and activities useful in war.

Organization.—The organization of the naval establishment, based upon the accomplishment of the purposes cited above, has remained essentially the same as in recent years, with some changes in fleet units due to the commissioning of new ships and the decommissioning of ships replaced by them. The forces afloat have, with minor exceptions, been assigned to the United States Fleet, the Asiatic Fleet, the Special Service Squadron and the Naval Transportation Service. Various small craft have continued to perform duty in

naval districts and at naval shore stations. The shore stations of all categories, since they exist for the support and maintenance of the forces afloat, have performed functions designed to contribute as effectively as possible to this purpose.

OPERATING FORCE PLAN AND PERSONNEL PLAN

Purpose.—The principal detailed basic plans for the operations of the Navy in any fiscal year are the Operating Force Plan and the Personnel Plan. These plans are interdependent, since the accomplishment of any Operating Force Plan requires primarily the necessary personnel to carry it out. The final Personnel Plan, which is based upon the numbers of enlisted personnel provided for by appropriations for the year, limits the character and extent of the Operating Force Plan which can be finally adopted. The Operating Force Plan, as adopted, is the basis of the detailed plans of all kinds for the conduct of activities of the various elements of the naval establishment in so far as concerns the operations of the forces afloat.

Personnel.—During the fiscal year 1936 it has been possible to maintain the average enlisted strength of the Navy at 88,000 men. The average enlisted strength of the Marine Corps has been 16,500 men.

Service Afloat.—The available personnel permitted manning the ships of the fleet with slightly more than the minimum numbers of men required for reasonably effective peacetime operation. The Navy Department considers that this minimum is 85 per cent of the full designed complement, except in the cases of certain ships, such as submarines, which cannot be operated safely with less than 100 per cent of their complements. The enlisted personnel situation during the fiscal year 1936 has been reasonably satisfactory, as

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far as numbers are concerned, and good progress has been made in the essential training which is constantly under way in order to keep the fleet prepared to meet emergencies.

Ships in Commission.—There have been maintained in commission and operated during the year 318 ships assigned to the seagoing organization. In addition, 169 small craft of various types have been operated in the naval districts and attached to shore stations. Four non-combatant ships have been loaned to States for use as nautical school ships for the training of merchant-marine personnel. A total of 487 naval vessels of all types was thus operated during the year, not including the state school ships. The ships of fleet types, referred to above, have included 15 battleships, 16 heavy cruisers, 10 light cruisers, 117 destroyers and light minelayers, 53 submarines, four aircraft carriers, one minelayer, 13 patrol vessels, and 89 auxiliaries of all types. Included in the foregoing are the following new ships, placed in commission during the year: one heavy cruiser, two destroyers and four submarines. Ships restored to full commission after periods out of commission were one mine sweeper, one tug and one auxiliary vessel.

Ships Placed Out of Commission.—The following ships were placed out of commission during the year: one destroyer, one submarine, one patrol vessel, one tug and one auxiliary. In addition, 41 ships which were over age and whose effectiveness did not warrant expenditure of further funds for reconditioning, were stricken from the Navy Register during the year.

THE UNITED STATES FLEET

Operations.—The United States Fleet operated throughout the fiscal year in Eastern Pacific waters, engaged in a program of training exercises in tactics, gunnery, engineering and communications, which culminated in Fleet Problem XVII conducted in the Panama-Pacific area. This was a large-scale exercise, participated in by all available units of the fleet, designed to train the per-

sonnel in strategic studies and tactical exercises, with coordinated application of the previous more individual training of units and of type groups. The exercise also served the purpose of familiarizing the personnel of the fleet with the area in which it took place and with the problem of defending the Panama Canal. Upon completion of the exercise certain units of the Scouting Force paid good-will visits to ports on the west coast of South America. The fleet returned to its bases on our Pacific coast in June, except that a number of cruisers and destroyers were sent to the Atlantic coast for overhaul in eastern navy yards.

The Training Squadron of the Scouting Force was employed throughout most of the year in making practice cruises for the training of naval reserves, including Naval R.O.T.C. students. During the summer of 1935, the U.S.S. *Arkansas* and *Wyoming*, of this squadron, made the annual training cruise with midshipmen of the Naval Academy.

During the year the minecraft of the Battle Force, assisted by seaplane from the Fleet Air Base, Pearl Harbor, completed a preliminary survey of Kure Island and of Pearl and Hermes Reef in the Hawaiian Islands. Hydrographic surveys by naval vessels specially detailed to this duty were continued throughout the year in the Panama area and along the northern coast of Colombia in cooperation with the Colombian Government.

Tactics.—The training of the fleet in tactics is continuous and progressive. Exercises by type units are followed at frequent intervals by maneuver periods in which all types assigned to the major forces are brought together for coordinated exercises. Finally, the annual fleet problem brings all forces of the fleet into a major exercise of considerable duration in which opportunity is had for training all elements in the kinds of employment which they may be called upon to meet in a major campaign. The progress made in this progressive and intensive training throughout the year was very satis-

OPERATIONS OF UNITED STATES NAVAL FORCES

factory and the tactical knowledge and capabilities of the fleet were considerably advanced. The results obtained have continued to justify fully the existing policy of keeping the fleet concentrated by basing its major elements in the same general operating areas so that coordinated tactical training can be accomplished with the greatest possible frequency and efficiency and with the least expenditure of fuel.

Gunnery.—Training of all units in gunnery has continued to occupy an important place in the program of preparing the Navy for the eventuality of war. Ships and aircraft in full commission have conducted prescribed practices in the use of the weapons assigned to their particular types. This training also is progressive throughout the year and proceeds from the most elementary to the more advanced and more realistic forms of exercise. This procedure is necessary each year in order to provide basic training for new personnel absorbed into each organization. The nature of the practices is, however, designed to accomplish each year a distinct advance in technique as weapons are improved and knowledge of the art progresses.

The improvement in efficiency accomplished during the past year has been very satisfactory. The policy of conducting gunnery schools on board selected ships has been continued. Officers and men occupying key positions in ships' gunnery organizations are assembled on board the "school" ship for the type, where they are given a short and intensive training in standard gunnery methods and in experimental problems. This results in quick and wide dissemination of information developed and imparted by the school. Primary training of this nature is particularly valuable because of its effectiveness and economy.

A very useful adjunct to the gunnery training facilities of the fleet is under development on San Clemente Island, off the coast of Southern California, which has been assigned to the Navy for use as a gunnery training area. This, among other pur-

poses, will facilitate essential training in small arms, which has been carried on during the past year on a considerably reduced scale.

Engineering Performances.—The performance of vessels in engineering efficiency and economy has been satisfactory. Reliability of operation has been stressed with good results. All ships in full commission have been included in the existing system which requires the regular submission of detailed data covering all phases of engineering performance. Analysis of the data thus collected greatly assists the material bureaus of the Navy Department in their functions of design and supply, and makes valuable additions to the completeness and reliability of logistic data available for use in planning future operations.

AVIATION

Aircraft.—At the end of the fiscal year, on June 30, 1936, the Navy had 977 service airplanes on hand. The outstanding position of our naval aviation has been maintained and has continued to justify the existing system of naval aviation administration, which is characterized by unity of command and community of effort toward a common purpose. The coordination of fleet aircraft with the surface units has been steadily advanced through their regular participation in fleet exercises.

The Navy's policy with regard to further development of lighter-than-air craft will depend upon added study of all aspects of the present situation and upon mature consideration of the reports of the special committee of the Service Advisory Board which has been making an analysis of this subject.

During the latter part of the fiscal year the German rigid airship *Hindenburg* began a series of trans-Atlantic passenger flights, using the Naval Air Station, Lakehurst, New Jersey, as its United States base. The facilities of the station were made available to the Zeppelin Company under a revocable permit issued by the Navy Department.

Flights.—During the year Navy

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aircraft took part in the following notable flights:

1. Approximately 483 fleet aircraft participated in Fleet Problem XVII. In addition to the squadrons which normally operate from the aircraft carriers of the fleet, an observation squadron and a bombing squadron of the Fleet Marine Force were embarked in, and operated from, the *Saratoga* and *Lexington*, respectively.
2. Patrol plane squadrons made several extended cruises away from their regular bases, being accompanied only by small tenders of the minesweeper type. Squadrons from the fleet air base at Coco Solo, Canal Zone, conducted such operations in August-September, 1935, in Caribbean areas in the vicinity of Mugeris Island, Yucatan and Honduras; and in February, 1936, in areas adjacent to Colombia, Ecuador, Costa Rica and Galapagos Islands. Squadrons from the fleet air base, Pearl Harbor, Hawaii, made a similar cruise in November, 1935, to French Frigate Shoal and various islands in the vicinity.
3. Aircraft One, Fleet Marine Force, with a complement of 50 airplanes, flew from Quantico, Virginia, to the Puerto Rican area via Cuba, Haiti, and Santo Domingo during January, 1936, and returned to Quantico in February, after participating in Fleet Landing Exercise No. 2. No personnel casualty nor important material casualty attended this operation.
4. During January and February, 1936, airplanes from the *Ranger* conducted cold weather flight tests and other tests of material in Alaskan areas.
5. An aircraft squadron of the Fleet Marine Force, V0-9M, en route from Quantico, Virginia, to St. Thomas, Virgin Islands, for duty, in August, 1935, interrupted its flight for a stay of several days at Miami, Florida, where it rendered assistance in

relief work following a hurricane.

6. Aircraft attached to the Fourth Naval District rendered valuable service in the relief of sufferers during the flood emergency in Pennsylvania.
7. On Oct. 9-10, 1935, the Navy's experimental patrol plane, P3Y-1, under the command of Lieutenant Commander Knefler McGinnis, U.S.N., made a non-stop flight from Norfolk, Virginia, to Coco Solo, Canal Zone. Continuing its flight, with the same crew, this plane, on Oct. 14-15, flew non-stop from Coco Solo to San Francisco, Calif., a distance of 3,281 miles, in 34 hours and 40 minutes, establishing a world record.
8. During July, 1935, aircraft from the Naval Air Station, Anacostia, D. C., took part in the All-American Aircraft Show at Detroit, Michigan. In August-September, 1935, Aircraft One of the Fleet Marine Force participated in the National Air Races at Cleveland, Ohio.
9. Aircraft from the Naval Air Station, Pensacola, Florida, basing upon Miami, furnished air-mail service to the President during his cruise in Bahaman waters in March and April, 1936.

THE ASIATIC FLEET

The ships of the Asiatic Fleet continued, as in former years, their normal employment in tactical exercises and gunnery training. Patrol squadrons of small ships were maintained in service on the Yangtze River and in Southern Chinese waters in close touch with the disturbed areas in those regions. Other units of the fleet made training cruises to the southern islands of the Philippines. Courtesy visits were made by various ships of the fleet to Siam, Singapore, Dutch East Indies, British North Borneo, French Indo-China, Japan and Hong-Kong.

The Fourth Regiment of the Marine Corps, with a strength of 1,088 officers and enlisted men, remained stationed at Shanghai. It performed

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no military operations, except in continuation of its program of training. It has maintained friendly relations with the Chinese people. The Embassy guard of marines was maintained at Peiping as in former years. It had a strength of 498 officers and enlisted men at the end of the fiscal year.

SPECIAL SERVICE SQUADRON

The ships of the Special Service Squadron have been employed in their normal area of operations during the past fiscal year. They have based upon the Panama Canal Zone and have conducted the greater part of their prescribed training exercises in the Panama area. In January-February, 1936, they participated in Fleet Landing Exercise No. 2 held in the Puerto Rico area. During the year various vessels of this squadron made visits of courtesy and goodwill to Barbados, Colombia, Costa Rica, Dutch West Indies, Guatemala, Honduras, Martinique, Mexico, Panama, Trinidad and Venezuela.

NAVAL TRANSPORTATION SERVICE

During the fiscal year 1936 the following vessels were operated regularly in the Naval Transportation Service:—two oilers, two cargo vessels, two transports and one ammunition ship. One combination cargo and troop ship was assigned temporarily to this service. These ships fulfilled the purpose of providing economical water transportation of naval personnel and supplies between localities, ships and stations where suitable commercial carriers are not available or for which suitable commercial bottoms cannot be satisfactorily obtained on account of the character of the cargo or the delivery conditions required; for example, ammunition and heavy guns.

The *Sirius*, and auxiliary cargo ship, carried out the annual mission of visiting the Pribilof Islands to carry personnel and supplies to the government agencies in those islands and to bring to the United States the annual shipment of sealskins from the government rookeries.

NAVAL INTELLIGENCE

Functions.—The Office of Naval Intelligence gathers information of value to the Navy, evaluates and analyzes the data collected, and transmits the results of its studies to the appropriate naval agencies. It supervises generally the activities of naval attaches and naval missions abroad, maintains the library of the Navy Department, and conducts the Department's press relations branch. These activities were continued during the fiscal year 1936 along much the same lines as in recent years. Previously existing naval attaché posts were added to by the establishment of similar offices in Rio de Janeiro and in Lima, Peru.

Publicity.—Relations with the press and with other publicity organizations were cordial and mutually helpful. The public was supplied, as fully and promptly as limited facilities permitted, with all information concerning the Navy and its activities not incompatible with necessary military secrecy.

Library.—The collection of the Navy Department Library has been increased by about 1,400 books and documents, the total number of items being now 83,245. The photographic collection is of special interest, and now contains 31,780 prints which have been indexed and mounted. The first two volumes of a collection of historical naval documents collected and edited by the Library are now in print and may be bought from the Superintendent of Documents, Washington, D. C. An important part of the work of the Library consists of the research necessary to comply with requests for information received from government departments and from the public.

NAVAL COMMUNICATIONS

Radio Stations.—During the fiscal year 1936 there were 36 naval radio traffic stations and 43 radio direction-finder stations maintained in active commission ashore. Seven radio traffic stations were in an out-of-commission status and were maintained by upkeep of material only. In addition, 12 radio receiving sets, each

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operated by one radioman, were maintained at United States diplomatic and consular stations abroad for the purpose of copying daily bulletins prepared by the Department of State and broadcast from the naval radio stations in Washington and at Cavite, P. I. In August, 1935, a naval radio station was established in the United States Legation at Addis Ababa, Ethiopia, to provide direct and secure communication between the United States and our diplomatic mission at that capital during hostilities. It remained in operation at the close of the year.

Traffic Volume.—The total traffic including relayed messages, handled by the naval shore radio system during the year is estimated at 113,360,196 words. Of the Government traffic, 46 per cent was for the Navy, 54 per cent for other departments. The estimated saving to the other departments was \$1,816,115, assuming that their traffic would otherwise have been sent by commercial system.

Functions.—The naval radio direction-finder stations furnish bearings for navigational purposes to ships at sea near our coast and to aircraft in flight, when requested. Service to aircraft is not yet extensive, but is increasing. During the year the stations furnished about 26,300 bearings to naval vessels and about 212,000 bearings to other craft, both foreign and domestic. The value of this service to shipping is incalculable and it meets with widespread appreciation. The Navy Department endeavors steadily to improve the service by modernizing the equipment and by increasing the effectiveness of the methods of operation.

Time Signal Broadcasts.—The time signal service furnished by the Navy, through the Naval Observatory and the naval communication system, is indispensable to navigators, scientific workers and others requiring accurate time information. Time signals from the Observatory are broadcast by naval radio from Washington twenty times daily, some signals being sent on a variety of frequencies. There are twenty-three daily time broadcasts from other naval radio sta-

tions. Counting all frequencies used, the number of time-signal broadcasts from naval radio stations totals 24,555 annually.

Weather and hydrographic bulletins are broadcast daily from a number of naval radio stations on a variety of frequencies. The Navy also assists the Weather Bureau in collecting the information upon which the weather bulletins are based.

Commercial Traffic.—Certain naval radio stations handle private traffic in localities where commercial service is not available. This service is being reduced as rapidly as adequate commercial service can be furnished. During the year the Naval Communication Service paid into the United States Treasury \$3,800 earned through charges for commercial traffic.

Efficiency of radio communication in the fleet has been improved, partly as a result of modernizing of equipment and of restoring the competitive feature of fleet communications. Visual communication between naval vessels and United States merchant vessels at sea by means of flags and flashing lights has been emphasized, with mutual benefit and with a considerable increase in the number of messages exchanged. During the year there was made, for the first time, an emergency radio broadcast addressed to all ships of the United States merchant marine at sea. Reports have indicated that successful reception resulted.

The Naval Communication Reserve has made satisfactory progress in its training. The reserve personnel placed on temporary training duty in certain naval districts during Fleet Problem XVII gave an excellent account of itself. In other districts reserve communication personnel rendered voluntary service of high order in connection with the Florida hurricane, the flood emergencies in various eastern States and other lesser disasters.

Service of Private Companies.—During Fleet Problem XVII the radio stations of the Radio Corporation of America and the Mackay Radio and Telegraph Company near San Francisco participated in naval communi-

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cations and rendered service of a high degree of excellence.

Army-Navy Cooperation.—Cooperation between the Army and Navy in communication matters has been

continued actively and a joint exercise is being planned in order to test the effectiveness of the arrangements agreed upon for coordination in the event of emergency.

NAVAL CONSTRUCTION AND EQUIPMENT

By PETER BAIN

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THE NAVAL PACT OF 1936

The Five-Nation Conference which assembled in London early in December, 1935, and later adjourned until January 6, 1936, completed its deliberations with the formulation of a new naval pact to which the signatures of three of the countries represented were attached on March 25—the United States, Great Britain and France. Japan and Italy failed to sign, the first having bolted the conference on Jan. 15 because of its non-acceptance of a “common upper limit” sponsored by the Japanese delegation. Italy refused to sign because sanctions imposed by the League of Nations were in force against her. The *raison d’être* of the conference lay in the circumstance that at midnight, Dec. 31, 1936, all naval treaty restrictions, those of Washington (1922) and London (1930), would cease to function, and fears were expressed that, unless the groundwork of some saving plan were interposed, a riotously costly naval construction era would be inaugurated with the advent of 1937.

The 1936 treaty pact may be taken as a partially successful attempt in the face of almost insurmountable obstacles to replace the previous pacts of Washington and London. The new treaty became effective Jan. 1, 1937, and will remain operative until Dec. 31, 1942. Provision is made for a conference in 1941 to the end that it be either renewed or another formulated. Germany and Russia announced willingness to agree to the treaty terms, and each is expected to sign identical bilateral treaties with Great Britain in due course. As regards Italy, now that sanctions

are out of the way and having in mind the circumstance that her ambassador in London took a full part in negotiating and drafting the treaty, little doubt exists of action otherwise than in association with her sister nations. Although Japan’s attitude towards the new treaty was by no means certain when the deadline of midnight, Dec. 31, 1936, was reached, it was generally believed that she would respect its provisions even without becoming a signatory. It may be stated that the treaty bristles with escape clauses so broad in scope that they would cease to be binding should Japan or any other naval power disregard its terms.

Without placing the new treaty in its proper setting against the stormy international sky, it is practically impossible to assess its intrinsic value. Its terms are generally admitted to be much less important than the nature of the knowledge and assurance it conveys relative to the regulation of world naval construction during the next six years. By comparison with the treaties now defunct, the new pact may be described as feeble, setting as it does no limit on the number of war vessels any nation may build. It promises, however, to avert one of the worst forms of naval equipment competition by limiting gun calibers in all vessel categories. Again, provision is made for full and frank exchanges of construction plans by all the naval powers. The most serious obstacles encountered in reaching agreements by the delegates appeared to have been political rather than naval. There were times, it is said, when it seemed that no treaty could be signed, al-

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though there was fairly close technical agreement all the way through among the delegates except the Japanese. Some one has made the point that the delegates have thrown a temporary wood bridge across the chasm of naval competition, and that a steel bridge, limiting total tonnages as well as types, may come later. Such a hope is to be found in at least one article of the new treaty.

PROVISIONS OF THE NEW TREATY

The system of quantitative limitation in force since 1922 expired at the 1936 year-end, Japan refusing to accept any extension of the ratio method. On the qualitative side, the treaty embodies a few reductions as well as limitations. The maximum for capital ships remains at 35,000 tons with the age limit extended from 20 to 26 years. Maximum gun caliber is reduced from 16 to 14 inches, subject to agreement by Japan and Italy. On the material side, the most noteworthy decision relates to vessels in the cruiser categories. With the cruiser standard reduced to 8,000 tons there is involved at least the temporary suppression of the 10,000-ton 8-inch gun craft. Otherwise expressed, for the next six years the maximum of cruiser size will be limited to 8,000 tons and the armament to 6.1-inch guns. The old distinction between cruisers and destroyers is abolished, removing the obstacle that kept the French from signing the London Treaty of 1930. A further qualitative provision concerns the so-called zone of "no construction" between 8,000 and 17,000 tons, under which no nation can evade the cruiser limit by building 12,000- or 13,000-ton craft and labeling them capital ships. The maximum size of aircraft carriers is reduced from 27,000 to 23,000 tons of 6.1-inch gun armament. The maximum for submarines is unaltered at 2,000 tons with 5.1-inch gun arma-

ment. exchange their programs of construction or acquisition of vessels for that year. Full details of each vessel must again be given four months ahead of the keel-laying and, again, one month following a vessel's completion. The so-called escape clauses provide that the treaty can be suspended temporarily in the event of war in case the "national security of a signatory becomes affected by some change of circumstance, or if any nation builds out of conformity with the treaty." All signatories must be notified before suspension of the treaty.

One result of the Five-Nation Conference, aside from the others already cited, takes account of the smoothing out of all naval differences between the English-speaking powers. Apparently it is now mutually recognized that their sea-power policies are to all intents and purposes identical. An exchange of letters between Norman H. Davis, head of the United States delegation and Anthony Eden, British Foreign Secretary, immediately preceding the treaty-signing formalities, gave intimation to the world that each of the nations for which they spoke would maintain the principle of parity between their navies although each would become free at the year-end to build and equip as many war craft as it saw fit.

GREAT BRITAIN'S INVOCATION OF ESCALATOR CLAUSE

No sooner, however, had some degree of restraint been thrown in the path of an armaments race at the dawn of 1937, than up-cropped a new although not unexpected phase of the universal movement towards increased armament. On July 15, Great Britain formally invoked the escalator clause of the then dying 1930 naval treaty in order to retain 40,000 tons of over-age destroyers that otherwise would be due for scrapping at the year-end. This action, which had been a foregone conclusion for many months, was announced in notes handed to the United States and Japanese Ambassadors. To the United States

To guard against secret naval construction, the treaty provides that, within the first four months of each calendar year, the signatories shall

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was given automatically the right to increase its destroyer tonnage to the new British level of 190,000 tons and to Japan the authorization to increase its destroyer strength from 105,000 to 133,630 tons.

The pretext for Great Britain's action rested on the abnormal submarine and destroyer construction of recent years by France and Italy, neither of whom signed the 1930 treaty. The destroyers to be retained will be rearmed with larger guns and will form part of the cruiser tonnage under the old treaty. Admiral William H. Standley, Acting Secretary of the United States Navy, was quoted to the effect that we would probably "match" Great Britain in retention of destroyers beyond the treaty allotment. He said the United States had in excess of 120,000 tons of over-age ships that should be disposed of by Jan. 1, 1937, in accordance with old treaty limitations, adding that tonnage sufficient to match the British over-quota allowance would be taken from among the best equipped of these old vessels. Under the 1930 Treaty, the three signatory powers—United States, Great Britain and Japan—were required to scrap tonnage above specified limits in the categories of cruisers, destroyers and submarines, on expiration of the pact on Dec. 31, 1936.

By invoking the escalator clause of the 1930 treaty, any signatory power must assume responsibility for increasing the size of world navies, this feature being specially stressed in correspondence on the subject between the United States and Great Britain. The latter, it may be pointed out, sought to avoid this responsibility by sounding out both the United States and Japan as to the possibility of all three agreeing to some plan of joint action whereby the trio would share responsibility. The Tokyo newspaper *Asahi* of Aug. 31, reported that, following the lead of Great Britain's adoption of the escalator clause, Japan will adhere to the Washington Naval Treaty ratios but will retain excess submarines as well as destroyers. At date, Japan did not possess excess destroyer ton-

nage but in the matter of submarines she possessed 70,000 tons instead of the permitted 52,000 tons.

At the year-end, appearances indicated that all three signers of the 1930 Treaty would keep whatever excess tonnage they might possess on Dec. 31, 1936, instead of scrapping it in accordance with treaty terms. Great Britain in its role of sponsor of bilateral treaties of a supplementary nature had progressed little further than the negotiation stage with Poland, Russia, Germany, the Scandinavian countries, etc. The crux of the bilateral treaty situation centered around Germany's willingness to add to her existing naval understanding with Great Britain the factors of qualitative control, exchange of information and Japan's attitude towards acceptance by Russia of the like terms. One of the special features of the tentative Anglo-Russian agreement was the Soviet's right to build seven 10,000-ton cruisers armed with 7-inch guns. With regard to the Scandinavian and other Baltic powers no difficulty is likely to be experienced concerning bilateral agreements.

U. S. COMBATANT VESSELS UNDER CONSTRUCTION

During the fiscal year ended June 30, 1936, the Bureau of Construction and Repair of the United States Navy was active in the prosecution of the extensive building programs authorized by Congress over the past three years, together with the preparation of plans in anticipation of possible new building activities. In addition to the completion of the last two vessels started prior to 1933, seven vessels contracted for in that year were completed. The average percentage of completion of the remaining 31 vessels then contracted for advanced from 44.6 to 85.6 during the elapsed 12 months. During the same period the average percentage of completion of the vessels for which contracts were placed in 1934, advanced from 11.6 to 50.9. Thirty vessels were launched during the year and keels for 21 others were laid. Of seventy-nine ships under construction on July 1, three were

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aircraft carriers, two were of 10,000-ton heavy cruiser type, nine were light cruisers, 12 were submarines, 11 were destroyers of 1,850 tons, 40 were destroyers of 1,500 tons, and two were gunboats. On Aug. 12, the Bureau of Construction and Repair reported 48 of the 79 vessels under construction were behind schedule. During the first 11 months of the year 1936, launchings took place of the aircraft carrier *Enterprise*, heavy cruiser *Vincennes*, light cruisers *Brooklyn*, *Boise* and *Philadelphia*, submarines *Perch*, *Pickrel*, and *Permit*; 1,850-ton destroyers *Selfridge*, *McDougal*, *Winslow* and *Balch*; 1,500-ton destroyers *Drayton*, *Lamson*, *Reid*, *Tucker*, *Downes*, *Smith*, *Gridley*, *Dunlap*, *Fanning*, and *Bagley*; gunboats *Erie* and *Charleston*.

STUDIES AND PLANS FOR NEW SHIPS

Contract plans and specifications for DD destroyers 409-420 have been prepared, also specifications for SS submarines 188-193. Contract plans for the latter were prepared by the Navy Yard at Portsmouth, N. H., in accordance with the Bureau's instructions, and were in due course issued to prospective bidders. Design plans, together with specifications in a few cases, were under way for six types of navy auxiliaries, one of the designs being under development by the Central Drafting Office, New York. In addition to preliminary design studies relative to the foregoing, preliminary studies have also been made or are in process for several types of combatant and auxiliary vessels. Reference is again made to the circumstance that the necessary funds have not as yet been obtained for building the new experimental model basin, authorization for it having been given during the year. The present model basin is severely handicapped because of antiquated facilities, a condition so serious as to call for a special note by Rear Admiral E. S. Land, Chief Constructor, in closing his annual report. "It is definitely known," states the special note, "that American shipbuilders are going abroad for some of their model basin work. This is

due in part at least to the inadequate facilities of our own model basin and is a condition of such serious importance as to require immediate correction by building a new basin. The Bureau cannot too strongly stress the importance to the shipbuilding industry of the United States of obtaining funds for the construction of this new model basin at the earliest possible date."

EQUIPMENT PROGRESS AND DEVELOPMENT

Submarine Escape Apparatus.—

During the fiscal year a sufficient number of improved type submarine escape apparatus (Lungs) were obtained to complete the replacement started in 1934. The improved type Lungs, in addition to affording a means of escape from disabled submarines, are designed to protect personnel against any toxic gas such as chlorine or carbon monoxide that may be encountered on board in case of accident.

Tools for Underwater Service.

—Contract was placed in the last quarter of 1936 for an experimental lot of tools for submarine rescue and salvage craft. Their principle of operation differs radically from that of power and portable tools of conventional design. They are planned to operate both under water and on deck.

Pontoon and Salvage Gear.—

Maintenance was continued at the various submarine bases of sufficient salvage gear to carry out any major submarine salvage operation.

Life Preservers.—Investigation of a more satisfactory material than the kapok used in navy life jackets continued throughout the year. The Philadelphia Navy Yard was authorized to make up 100 life jackets containing this material for extended service tests throughout the fleet.

Anchors and Chains.—Cast steel and die-lock chains continue to give satisfactory service. In the past it has been the practice to replace anchor chain when the wire diameter of the links was reduced 10 per cent by wear and corrosion. Tests during the year demonstrated that cast steel and

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die-lock chain can be continued in service with safety until the wire diameter has been reduced 15 per cent.

Fire Extinguishers.—Replacements of portable carbon tetrachloride and portable foam type extinguishers with carbon dioxide extinguishers has been practically completed.

Boats.—There is being developed a new design for a 30-ft. motor launch, also a design for a 40-ft. gasoline delivery boat. Primarily, the motor launch is being developed for employment on destroyers, the first of the type being under construction at the Navy Yard, Norfolk, Va. Upon completion of satisfactory tests, plans will be furnished other yards that they may cooperate in construction. The gasoline delivery boat is being developed for servicing airplanes. It is expected that at least one of the type will be built during 1937. Tests on a new design 26-ft. motor launch were completed and, being found highly satisfactory, a number of the type were placed for construction at the various navy yards. They will be issued to new destroyers. After three years of service and test, the sampan type torpedo retriever boat has been found much more satisfactory for use in Hawaiian waters than the navy standard 40-ft. motor retriever. The first boat of the type to be built by a Navy Yard is under construction at Pearl Harbor. Hull and fittings of this boat cost approximately \$6,000, while the standard retriever boats constructed at navy yards in the United States cost about \$8,725. Upon completion of the comparative tests of the aviation crash rescue boats and delivery to their respective stations, the crash boat program which included the furnishing of a large boat for each of the principal air stations will be in a manner concluded.

Portable Submersible Pumps.

There has been developed and satisfactorily shop-tested a truly portable submersible pump to replace the old style portable submersible unit; the new pump weighing less than 100

pounds as against 320 pounds of its predecessor. Its pumping capacities against different heads are also greater; besides, it will pass through an 8-inch hole.

Airplane Tension Winch.—In the effort to avoid damage to seaplanes, when being hoisted on board ships at sea, there has been sponsored the development of three different types of airplane tension winches. Preliminary shop tests indicate that the ultimate satisfactory solution of a difficult problem may be at hand.

Steering Gear and Windlasses.—Intensive efforts to improve steering gear and windlass installations relative to ruggedness, simplicity and reliability, has resulted in extremely satisfactory progress if experience so far in service be a reliable criterion of the improved designs.

Windlass Wildcats.—The Navy Yard, Norfolk, Va., in cooperation with the Bureau of Construction and Repair, has developed a much desired standard plan for the surface contours of windlass wildcats for various sizes of anchor cable. It is believed that this development will greatly assist manufacturers in providing wildcats that will function initially more satisfactorily than has been the experience of the past.

Stabilizing or Anti-Rolling Devices.—A resurvey of the field of stabilizing or anti-rolling devices for naval craft still warrants the opinion that no combination of compensating device and controlling apparatus yet developed offers sufficient advantage over certain disadvantages inherent in each to justify or require installation. To the end that an independent, authoritative opinion be had, arrangements have been made to have the National Academy of Sciences, through a committee under its auspices, make a check survey of the whole situation.

Navy Yard Plants.—Although a number of additions to plant equipment have been made to meet the requirements of the current ship construction programs, expenditures for the replacement of old units have continued on a restricted basis. A need exists for such new equipment

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as would permit the various yards to meet the trend of increasing accuracy of fabrication; also the speeding-up of numerous shop processes as a related factor in cost reduction.

Maintenance of the Fleet.—In the matter of repairs, available funds have been sufficient to keep the Fleet in a fairly satisfactory condition of material readiness for war. Such improvements as were undertaken and carried through constituted only a small percentage of the alterations contained in the approved status.

NEW CONSTRUCTION PROJECTED AND ORDERED

The Acts of March 27, 1934, and June 3, 1936, provided authority and funds respectively for beginning the construction of not more than two capital ships as over-age replacements, work to be undertaken only in the event that the President determines as a fact that capital-ship-replacement-construction is started by any of the other signatory powers to the London Treaty of April 22, 1930. In the light of the developments arising out of the London Treaty of March 25, 1936, and the developments since that follow, the United States is practically certain to engage in the construction of two 35,000-ton ultra-modern capital ships as over-age replacements. It is a foregone conclusion, too, that no time will be lost.

Decision of the United States to build two battleships followed announcement by the British Admiralty that effective with expiration of the 1930 London Treaty at midnight, Dec. 31, 1936, there would be inaugurated a huge naval construction program, included in which would be two battleships as powerfully combative as expert skill can make them. Automatically, the authorization given the President became operative at least to the extent that the Bureau of Construction and Repair of the Navy Department went to work on the necessary plans. The latter may be considered as being well on the way to completion when 1936 closed. Early in 1937 official announcement of the government's post-treaty pro-

gram was expected. Funds for starting the construction of the two capital ships were included in a record-breaking peace-time Navy Appropriations Bill of \$526,546,532 signed by President Roosevelt on June 4. In addition to provision for increases in enlisted strength, and size and facilities of the Marine Corps, the grand total embraced funds for 333 new planes, 12 destroyers, and six submarines. Each of the new battleships is expected to cost in the vicinity of \$50,000,000, of which, probably, \$15,000,000 will be spent on armor and armament.

All through 1936, not only the matter of new battleship construction but the whole wide scope of the category constituent of the United States Navy from an improved status aspect appears to have attracted rather more public attention than usual and this notwithstanding a long and active Presidential campaign through the columns of the press and on the air. On Feb. 11 an Administration plan for modernizing 14 of our fifteen battleships was pressed on Capitol Hill. Three members of the Navy's high command appeared before the Senate Naval Affairs Committee to request not only battleship improvement but that of two aircraft carriers as well. It was further urged that provision be made for the construction of 221,000 tons of auxiliary craft to transport ammunition and supplies. On April 7, Admiral William H. Standley, Chief of Naval Operations and Acting Secretary of the Navy, on his return from London from the Naval Conference, advocated an addition to the United States Navy of 12 7,500-ton 6-inch gun cruisers during the next four years. Of course, he also called for construction of two 35,000-ton battleships. It was pointed out that the United States needed the additional light cruisers for service with the battle force, particularly for the protection of destroyers and in general to round out the Fleet. It was suggested that the cruisers be built in groups of three each year, the first lot being provided for in the fiscal year beginning July 1, 1937.

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The Navy Department favors the installation of 16-inch caliber guns on any new capital ships that may be constructed. This was indicated on July 1 by Admiral Standley. Under the Naval Treaty of 1936, which was ratified by the Senate just before adjournment of Congress, the United States agreed along with the other signatories to reduce the size of guns on capital ships from a maximum of 16 inches caliber to a maximum of 14 inches caliber provided that Italy and Japan would agree to the same limitation. Should either or both of these countries decline, the treaty signatories would then be unbound. American naval tacticians favor the larger gun caliber. Admiral Standley made the point that the policy of the United States Navy was concerned almost exclusively with the building up to the strength authorized by the London Treaty of 1930, a program of itself that will take five years to complete. He expressed regret that Congress had failed to pass the Administration Bill authorizing construction of a number of auxiliary vessels. It is understood that American experts are not particularly interested at this time in the small fast torpedo boats with which the British, Italian, German and Japanese navies have been experimenting. According to Admiral Standley, "getting the United States Navy built up to treaty strength is more important than experimenting with sea sleds." A Washington dispatch of Aug. 8 to *The New York Times* spoke of a return to direct steam propulsion for the two prospective battleships. The projected return to steam is somewhat of a departure in American battleship experience since the last five built in that category were electrically propelled. It is more than 13 years since the launching of a United States battleship.

NEW CONSTRUCTION CONTRACTS

On Aug. 25, contracts were awarded by the Navy Department to private yards for the construction of six 1,500-ton destroyers and three

1,300-ton submarines. Navy Yard allocations related to the construction of four 1,500-ton destroyers and two 1,300-ton submarines. Two additional destroyers and one submarine will be allocated to Navy Yards when decisions have been reached concerning the construction of a floating drydock for Pearl Harbor and construction of one of the two projected battleships at an East Coast navy yard. The awards to private yards were to "the lowest satisfactory bidder" with prices specified as subject to adjustments for changes in labor and material costs within certain limits. Awards to private yards consisted of two destroyers to the Newport News Shipbuilding and Drydock Co. at \$4,125,000 each, two destroyers to the Federal Shipbuilding and Drydock Co. of Kearny, N. J., at \$4,267,000 each, two destroyers to the Bath Iron Works Corporation of Bath, Me., at \$4,343,150 each, and three submarines to the Electric Boat Co. of Groton, Conn., at \$2,734,000 each. Allocations to Navy Yards were two submarines to Portsmouth, two destroyers to Boston, and one destroyer each to Norfolk and Charleston. According to the Navy Department, costs were higher than those in corresponding awards the previous year by 8 to 8½ per cent for destroyers and 9 per cent for submarines. The higher costs were believed to be due to improved designs of the vessels which are slightly larger than those of the year previous. Labor and materials were other factors.

FLEET AUXILIARY AND MERCHANT MARINE

Notwithstanding that "the basic and replacement plan" authorized by the Vinson-Trammell Act to bring the United States Navy up to treaty strength is well under way, Secretary Swanson in his annual report to the President strongly urged the building up of an adequate fleet auxiliary and the Federal support of an American merchant marine as a supplementary line of defense. He further advocated appropriations for more enlisted men and officers to man the new ships under construction or appropriated

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for; also more funds for naval reserve activities. The safeguarding of supplies of fuel to meet all manner of naval requirements constituted another highly important matter stressed in the report. Recommending a continuing program for construction of replacement vessels, Secretary Swanson claimed that legislation is greatly needed to give authorization for an adequate continuing plan of improvement in the sphere of fleet auxiliary craft. In time of war the vast auxiliary service which would be essential to the proper support of the fleet would be organized for the most part from merchant marine vessels of appropriate type. These are, however, not available for the supply and servicing of the peace-time navy, nor can they in time of war replace certain types of auxiliary craft due to the specialized nature of the service they render. In a word, they constitute a special design embodying the necessary speed and endurance to follow and take part in fleet movements. Most of the auxiliary vessels of the United States Fleet are now old and deficient in the characteristics required for giving thoroughly effective peace-time service and for performing war-time functions for which substitutes will not avail. It is urgently necessary, therefore, to replace with modern vessels those which are now old and unfit, besides adding a moderate number of new craft of specialized types.

The importance to our general welfare and security of a powerful, well-designed, well-balanced and well-established merchant fleet cannot be over-estimated. The merchant marine legislation enacted in June, 1936, is expected to provide the basis for a development favorable to the requirements of national defense as well as to the economic well-being of the country as a whole. In his warning of a possible shortage of fuel oil, Secretary Swanson pointed out that, in accordance with a policy previously established, the Navy has continued to make contracts for fuel oil to cover in addition to its own requirements those of other Federal activities that can participate therein

advantageously; a similar procedure being followed in the procurement of gasoline. The supply of fuel oil for purchase at Gulf ports appeared to be limited as no response was received to bids calling for delivery of 400,000 barrels opened on April 14, 1936. Although no serious embarrassment was experienced by the failure to obtain bids at this particular opening, the fact was disclosed that a supply of domestic fuel oil may not always be available from commercial sources when required.

CONSTRUCTION ACTIVITIES OVERSEAS

The gigantic armament structure, in the creation of which almost every country of the world has become embroiled, came under review in the League of Nations *Armament Year-book* for 1936 and, needless to say, it showed a huge increase all along the line. It was pointed out, however, that accurate data on Germany were not obtainable. According to experts associated with the League the frantic rush to build up armaments brought forth an expenditure of \$9,295,000,000 during 1935. Comparable figures were \$8,281,000,000 in 1934 and \$7,436,000,000 in 1933. Increases were strikingly illustrated in world total naval tonnage. War vessels constructed or being constructed in 1935 aggregated 6,130,000 tons compared with 5,830,000 tons in 1934. Soviet Russia's navy was credited with four battleships, seven cruisers, 35 destroyers inclusive of mine layers, 26 submarines with 12 more under construction and 60 miscellaneous craft. The German navy was said to include six battleships with two under construction, six cruisers with three under construction, 19 destroyers and torpedo boats with 16 under construction, 20 submarines with 16 under construction, and 120 miscellaneous craft. Italy's navy was placed at four battleships with two more under construction, one aircraft carrier, 23 cruisers with two under construction, 103 scout destroyers and torpedo boats with 15 under construction, and 62 submarines with 16 under construction. Japan's navy was said to

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include ten battleships, four aircraft carriers, with two more being built, 41 cruisers with three being built, 108 destroyers and torpedo boats with 20 being built, and 61 submarines with six being built. One of the biggest increases in national defense expenditure was shown by Great Britain. Her navy according to the *League Yearbook* included 12 battleships, three battle cruisers, six aircraft carriers with another under construction, 48 cruisers with eight under construction and three not then laid down, eight flotilla leaders with two under construction, 145 destroyers with eight under construction, eight not then laid down and another seven projected, 52 submarines with five under construction and three more not then ordered.

International effort to eliminate the horror of submarine warfare progressed a stage further on Nov. 6 when the protocol laying down rules for the conduct of submarines was signed on behalf of all signatories to the Washington Naval Treaty of 1922. Unless, therefore, the new protocol becomes just another scrap of paper, no submarines may sink or disable a merchant vessel unless first of all the passengers and crew are located in "a place of safety," and "for this purpose" says the protocol "ships' boats are not regarded as a place of safety unless the safety of the passengers and crew is assured in the existing sea and weather conditions by the proximity of land or the presence of another vessel which is in a position to take them on board." The only exception allowed by the protocol is that of a merchant ship demonstrating active resistance to being stopped by a submarine or when being examined by the crew of the latter. One of the articles of the protocol requests the British Government to invite all other powers "to accede thereto definitely and without limit of time." The United States, Great Britain, Japan, France and Italy constituted the current signatures. Germany, too, will sign the protocol for humanization of submarine warfare, a Foreign Office spokesman having so indicated. The

Reich's acceptance is a logical outcome of the Anglo-German naval agreement. The British Government was confident that all naval powers would come into line promptly.

GREAT BRITAIN'S PROGRAM

Thirty-eight new war vessels, including two battleships of about 35,000 tons each, were scheduled for the beginning of construction in 1936 as the first installment of the Navy's share in a \$1,500,000,000 rearmament program. Concurrent with the official announcement on April 30, an immediate start was to be made on two 9,000-ton 6-inch gun 32-knot cruisers; three 5,000-ton cruisers for work with main fleet; nine 1,850-ton destroyers supplementing eight of the like tonnage being built under the 1935 program; one aircraft carrier of size and capacity to be later decided; four submarines consisting of one of large mine-laying type, one of patrol type, and two of smaller type; three mine sweepers, two convoy and one coastal sloops; six motor torpedo boats probably similar to the so-called mosquito craft of high speed which Germany and Italy have been developing, one river gunboat, two small surveying vessels. Two special service vessels, together with many boom defense ships, motor boats, trawlers and tugs, appear under the general heading of smaller craft. Four 9,800-ton cruisers due to be scrapped will be retained, three to have their 7.5-inch guns replaced by guns of a caliber less than 6.1 inches so as to form a part of a future Cruiser B tonnage. The fourth will be demilitarized and transformed into a cadet training ship.

The first of six new high-powered motor torpedo boats which British experts assert are likely to revolutionize naval warfare was handed over to the Admiralty on June 24. Carrying a crew of ten, the vessel is equipped with two torpedoes which may be fired by radio. Light gun armament is a further feature. Eighteen such craft are claimed to be procurable at the same cost as one destroyer. Contracts for the two new battleships were awarded on July 29,

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one to be constructed at Walker-on-Tyne by Vickers-Armstrong, and the other at Birkenhead by Cammell-Laird. As a significant part of Great Britain's armament program, the disclosure was made in a recent White Paper that Cunard-White Star liners carrying mails were to be prepared "at the expense of the Admiralty to carry 6-inch guns." This provision, signed April 1 by the Postmaster General and representatives of the steamship line, forms part of a schedule attached to a new contract for the conveyance of mails to and from the United States. Other provisions of the contract suggest "that the contractors will cooperate in the distribution of naval intelligence and encourage the Royal Naval Reserve movement among the officers and men on board the contractors ships."

JAPAN

Independent naval construction which will not involve competition with the United States, and strict secrecy, are understood to be the governing principles of Japan's future naval plans. According to the newspapers *Jiji*, Japan will continue to build capital ships of the most modern and powerful type. Because of defensive requirements the Japanese, it is asserted, will build and maintain what will constitute, not improbably, the world's greatest destroyer and submarine aggregation. Aircraft too will be developed both quantitatively and qualitatively. Notwithstanding the foregoing, Japan's bolting the naval conference last January and her non-cooperative attitude throughout the balance of the year constitute a problem that both the United States and Great Britain would like to see solved.

FRANCE

On Dec. 2, France's Minister of Marine announced plans for a new naval construction program as an answer to increased war craft building by Germany and Italy. Five 35,000-ton battleships and ten 10,000-ton cruisers at an estimated cost of \$572,000,000 are called for completion by 1943. During the year, France's

naval strength was reinforced through the launching of the 7,720-ton cruiser *Georges Leygues*, the destroyer *Volta* of 2,884 tons and 90,000 horse-power, and the 26,500-ton battle cruiser *Strasbourg*.

GERMANY

The new edition of the *German Naval Calendar* of Nov. 7 revealed the formidable character of the Reich naval construction plans and activities while conforming strictly to the terms of the agreement with Great Britain. A 26,000-ton sistership to the new *Scharnhorst* was expected to take the water before the year end. Airplane carriers *A* and *B* now under construction are understood to be of 23,900 and 119,250 tons, respectively. Three more "pocket battleships" are projected but modified in the direction of the light cruiser type. Sixteen destroyers of 1,625 tons each have been launched, while five of 1,811 tons and 12,600-ton torpedo boats are under construction. Although no very clear indication is given concerning further projects in the realm of small ships it is evident that more torpedo boats and destroyers may be expected. The list of submarines in commission, under construction or projected, grows steadily. Two new submarines of 712 tons each were expected to be completed before the year end. Nine 500-ton units are reported to be under construction or just completed. Two more are under construction but neither their size nor armament has been revealed. For the time being there are more 250-ton submarines commissioned than any other size. Only incidentally are the launching and commissioning of auxiliary vessels made available; however, they are understood to include four submarine chasers and two tenders. Although one 35,000-ton battleship is projected, there is apparently to be no early keel-laying, the meantime disposition being to await such knowledge and experience as may be gained from the "pocket" type now in commission.

ITALY

A report by the Navy Ministry gave indication that Italy would

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spend \$135,246,100 during the year 1936-37. Many light war craft are being added to the two 35,000-ton battleships now under construction.

RUSSIA

The Soviet Government is understood to be embarking on a naval building program intended to win power on the sea comparable to its generally credited huge land power. Naval construction, presumably, has been devoted thus far largely to repairing and completing old Czarist craft and to the construction of destroyers, torpedo boats, mine-layers and submarines of which latter, foreign attachés believe, there are now in excess of 60.

CANADA AND AUSTRALIA

Canada has purchased from the

British Government two modern destroyers to replace two like vessels now obsolete. Although a step towards the expansion of its naval strength, there is no direct connection with the proposal to make substantial additions to the fleet concerning which an announcement was expected at the meeting of Parliament in January, 1937.

Details of the new defense expenditures relate to an additional ship of type still undetermined to be built in Australia, and modernization of the armaments on the 8-inch gun cruisers. There will be spent \$16,287,000 in commissioning three cruisers, one flotilla leader, two destroyers, two sloops and one survey vessel. A second sloop will be commissioned in 1937.

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By A. B. COOK

REAR ADMIRAL, U.S.N.; CHIEF, BUREAU OF AERONAUTICS,
NAVY DEPARTMENT

PREPAREDNESS

During the past year the Bureau of Aeronautics made every effort to maintain the aviation forces afloat in a condition of readiness for war in accordance with the Operating Force Plan, and, in order to attain a satisfactory state of readiness, endeavored to provide aircraft and equipment of the highest reliability and most modern design, and to use improved materials and maintenance methods. The measure of success attending these efforts may be judged by the highly satisfactory manner in which fleet aircraft have continued to carry out their duties in the Fleet.

WORKS OF THE BUREAU OF AERONAUTICS

The Bureau is charged with matters pertaining to naval aeronautics as may be prescribed by the Secretary of the Navy, and at present is charged with and responsible for all that relates to the design, construction, fitting out, testing, repair and altera-

tion of Naval and Marine Corps aircraft, and, except as specifically assigned to other cognizance, instruments, equipment and accessories pertaining thereto. In addition, the Bureau provides aircraft in accordance with approved operating force plans, maintains all aeronautic shore establishments of the Navy and Marine Corps and makes recommendations covering all aeronautics matters as to operations, personnel and material to the appropriate bureaus and offices of the Navy Department and the Headquarters, Marine Corps.

AIRCRAFT IMPROVEMENTS

Funds provided for experimental purposes have been used to obtain a very marked improvement in airplanes and engines and the best possible improvement in instruments, radio, armament, materials, aerodynamics, carrier launching and arresting gear and seaplane launching and recovery gear. Competition has been fostered in the industry in bringing

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out advanced experimental models of aircraft and at this time the Bureau has available for procurement in quantity one or more models in each class with improved performance.

In the matter of new and replacement aircraft the Bureau has used funds provided to procure aircraft of approved types, and in accordance with approved complements which embody the latest and most important developments in aeronautics. Increased engine powers available and improved aerodynamic design have contributed to the marked increase in speed range of new service types. This has been most evident in new scout-bomber airplanes and patrol planes now under procurement.

AIRCRAFT EXPANSION

The increase of Naval aircraft as authorized by the Vinson-Trammell Act has progressed satisfactorily in accordance with a program drawn up by the Bureau of Aeronautics in conjunction with the Office of the Chief of Naval Operations which provides an orderly expansion over a period of from five to seven years to make the eventual strength of the Naval Air Component commensurate with the "Treaty Navy." However, the provision of the supporting shore facilities for these aircraft has not kept pace with the aircraft expansion program. This is creating congestion at aircraft operating and repair bases that is becoming increasingly serious and requires prompt provision for additional shore facilities, including overhaul shops, housing for personnel, hangars, and operating improvements which have been recommended by this Bureau, if interference with Fleet operations is to be avoided.

Expansion of the Naval Aircraft Factory, Philadelphia, the main Supply Depot and Test Station for Naval aviation, is proceeding. This expansion will allow the manufacture of aircraft and aircraft engines in accordance with the Vinson-Trammell Act, which requires that 10 per cent of naval aircraft and aircraft engines be built by the Government. Orders for training aircraft were placed, based on the factory-built *XN3N-1*

experimental model, and deliveries were commenced in June, 1936.

Progress has been made in establishing the Aircraft Engine manufacturing plant at the Naval Aircraft Factory. Buildings have been completed, machine tools assembled, and improved equipment has been purchased for both the Aeronautical Engine Laboratory and the Physical Testing Laboratory. Due to the necessity of preparing the engine manufacturing plant, actual completion of engines has not yet been effectively carried out.

MATERIAL

Engines.—The policy of supplying the service with engines of maximum performance, reliability and endurance has been maintained by the continuous development and improvement of advanced types of engines together with an uninterrupted program of proof testing. The latter includes not only laboratory tests, but also standardized flight service tests in new airplane types, supplemented by the necessary special tests required to cover the requirements of Naval Aviation. As a result of this policy, and based on the results of the test program and of developments in the experimental field, it has been possible to provide a growing list of improvements to service equipment. The two-row radial engine has continued its service history with marked success. Late models of all current service type engines have shown gratifying increases in power output and altitude ratings without increase in displacement. Crankshaft torsional vibration dampers and full pressure lubrication to cylinder valve gear now standard in recent service types, have been so satisfactory that similar equipment is being supplied to certain earlier engine types where mechanical characteristics and economical considerations warrant such action.

Promising engine types and devices, the development of which is insufficiently advanced to warrant adoption as service standards, are under constant study, investigation and test.

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Accessories.—Similar development and test programs are in progress on accessory devices to meet the increasing complexities of modern power plant installations, particularly as regards automatic regulation, for the purpose of minimizing the demands upon the pilot's attention made by the power plant while in flight. The entrance of additional manufacturers into the accessory field and the improvement of present standard type devices have been among the recent developments. Improvement in equipment and methods for starting under cold or wet weather conditions has continued to be actively pressed. In the propeller field the service application of automatic constant speed propellers has been an important advance. Aircraft engine fuels and lubricants, one of the critical foundations upon which engine improvement is built, has been continued as the subject of an extensive development program.

Design.—In the field of structural development, investigation and study of special airplane design conditions necessitated by the employment of features such as diving and landing flaps have been continued at an accelerated pace. Considerable progress has been made also in developing analytical procedures for use in design of stressed skin structures which type of construction is being used more and more in airplane manufacture. In this connection a large amount of physical testing was performed to supplement the theoretical studies and calculations.

The problems of flying boat hull design are being studied with a series of large size models supplied by the Bureau for testing in the National Advisory Committee for Aeronautics' model basin at Langley Field. The use of the model basin at the Washington Navy Yard is available to this Bureau for design studies, but the limited capacity is a severe handicap to rapid design progress. The construction of the new model basin with a high speed section is necessary to meet present design requirements.

A number of important process

specifications have been completely revised, incorporating the results of test work. New material and process specifications have been prepared and issued. Type Airplane Specifications, and changes to the General Specifications for Design of Naval Airplanes, have been promulgated.

Water Pressures.—A program has been initiated for the purpose of attaining quantitative measurements of the water pressures and accelerations imposed on hulls and floats during take-offs and landings. These data have become of increased importance as a result of the rapidly growing size of the patrol type seaplane.

Flutter, buffeting and vibration research has been continued and considerable progress in investigating the fundamental features of these phenomena has been made.

In all this work the facilities of the National Advisory Committee for Aeronautics, the National Bureau of Standards, and the Naval Aircraft Factory were utilized to a great degree.

Standardizing.—During the year the Army-Navy-Commerce Committee on Aircraft Requirements was formed for the purpose of standardizing, in so far as practicable, the structural and material requirements and design procedures of the three Government Departments. This arrangement should result in material benefit to the Navy in connection with procurement of commercial airplanes.

Improved aerodynamic characteristics, due to the cumulative results of wind-tunnel tests during the past few years, have resulted in a corresponding increase in performance.

Wind tunnels at the Washington Navy Yard are employed continuously in making tests on current airplane design models. The tests are laid out and the reports prepared in such a manner that they are of permanent value in design work.

Wings.—The Bureau has supplied the National Advisory Committee for Aeronautics with a series of wings fitted with various types of high-lift devices. These wings have been

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tested in the full-scale wind tunnel and the investigation is being continued in flight with promising results. In connection with this study, various types of lateral control devices for use with flaps are being investigated.

Boundary-Layer Control.—The National Advisory Committee for Aeronautics, at the request of the Bureau, is studying the problem of "boundary-layer control." The object of the investigation to date has been to increase the maximum lift, but consideration is now being given to the reduction of drag by means of boundary-layer control.

Construction Materials.—The materials entering into the construction of naval aircraft are subject to severe operating conditions. These aircraft must operate on and over salt water, a medium peculiarly conducive to corrosion; they must operate in the heat and moisture of the tropics, and the freezing climate of the Arctic; and they must be able to endure rapid changes in temperature while climbing and diving. These conditions make the field of materials a scene of constant struggle to improve in lightness and resistance to wear, and to protect against fatigue and corrosion.

Overhauls.—In the maintenance of material the several aviation shore stations serving the Fleet overhauled 544 airplanes and 1,135 engines. This represents an increase of 12 per cent in overhaul aircraft and 45 per cent in overhauled engines as compared with the fiscal year 1935. Also, the number of flying hours between routine overhauls for both has increased as a result of improved operating maintenance, better design features, and improved quality of overhaul work.

Procurement and Deliveries.—The procurement of aircraft for the Navy has continued uninterrupted and the competition basis for aeronautical material has been expanded by special effort. Design competitions, flight operations and competitions in purchase are stressed in the procurement of aircraft and aircraft engines. During the fiscal year 370 airplanes and 468 engines were de-

livered which is considered to be a creditable performance. A tentative program of aircraft construction has been recommended which will provide approximately 1,910 airplanes by 1940-1942.

OPERATIONS

Ship-based aircraft in the Fleet participated in all Fleet problems and tactical exercises during the fiscal year 1936. Participation of the patrol squadrons in these problems and exercises included a flight by the San Diego based patrol squadrons from San Diego to Coco Solo and return.

On Nov. 1, 1935, two new patrol squadrons were formed, VP Squadron 12 attached to the *USS Thrush* based at Seattle and VP Squadron 14 attached to the *USS Owl* based at Norfolk.

The policy of ferrying new aircraft to the West Coast for delivery and of ferrying some old aircraft to East Coast stations for overhaul and return was continued, and during this fiscal year involved a total of 492 trans-continental flights.

In connection with the delivery of the *XP3Y-1* airplane from the Naval Air Station, Norfolk, to San Diego, this plane, in October, 1935, was flown, non-stop, from Norfolk to Coco Solo and non-stop from Coco Solo to San Francisco. The latter flight established two new international distance records for seaplanes; namely, airline distance record of 3,281.402 statute miles (previous record 2,462.166 statute miles) and a broken line distance record of 3,443.25 statute miles (previous record 2,764.-848 statute miles).

Increased attention has been devoted by operating units to problems involved in instrument flying. The Bureau has purchased and delivered to operating activities 11 Link Instrument and Radio Beam Trainers. It is expected that these trainers will provide a method of ground training which will greatly reduce the time required for instruction in the air and will result in the continuation of progress already made in this phase of flying.

Another feature which may be in-

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cluded in the field of operations was the launching of the aircraft carrier *USS Yorktown* on April 4, 1936.

PERSONNEL

Due to the shortage of regular officers of the Navy, available for aviation duty, the training and employment on active duty of Naval Aviation Cadets, was authorized by the Aviation Cadet Bill. The cadets, starting in July, 1935, have been given training at the U. S. Naval Air Station, Pensacola, and the first group commenced duty with the Fleet during the early months of the fiscal year 1937. Considerable interest is attached to this expedient of making up for the shortage of regular officers available for aviation duty.

AVIATION ESTABLISHMENT

The fiscal year 1936 has been one of steady and comprehensive development of much needed facilities at the Naval Air Stations and Fleet Air Bases. The funds available have been those provided by the regular Naval Appropriation and Deficiency Acts, allocations from the Public Works Administration and the Works Progress Administration, appropriation "Increase of the Navy, Emergency Relief Act of 1935, Expansion of the Naval Aircraft Factory," and the Second Deficiency Act (H. R. 8544) 74th Congress.

Projects of major importance, and which are well advanced toward completion, are as follows: At the U. S. Naval Air Station, Pensacola, Fla., development plans, which comprise a virtual rebuilding of the entire main station, and an appropriation of approximately \$3,000,000 have made possible the immediate necessary building. Work on this project will be completed during the fiscal year 1937. A total of \$1,124,000 is being expended in the development of the Fleet Air Base at Pearl Harbor, T. H. This work will be completed early in 1937.

With the transfer of Rockwell Field, San Diego, on Oct. 26, 1935, from the custody of the War Department to the Navy Department, the congestion existing at the Naval Air Station, San Diego, is somewhat

relieved. This was a much needed expansion since it is at San Diego that the fleet aircraft are concentrated during their periods of basing temporarily ashore.

Steps have been taken to provide aviation facilities at St. Thomas, V. I., by direction of the President. This work is well under way, and already a squadron of Marine Corps planes is operating from the field.

A bill passed by the 74th Congress authorized the acceptance of a site of land on San Francisco Bay from the City of Alameda, Calif. Plans for the development of this site are now being prepared by the Bureau of Yards and Docks in cooperation with the Bureau of Aeronautics.

Works Progress Administration projects for Naval Air Stations at Naval Reserve Bases were authorized in the amount of \$3,303,500. These projects are for maintenance, repairs, and improvements. Work was commenced in August 1, 1935, and was nearly completed by the end of 1936.

SUMMARY

The foregoing résumé outlines the work which has been accomplished during the past fiscal year and that which is now under way. In addition to a continuance of our efforts along these lines, recommendations have been made to the Secretary of the Navy stressing the immediate future needs which include the necessary increases in facilities at shore stations as required by the increase in number of fleet aircraft; funds for the rapid development of the Naval Air Station, Alameda, Calif.; the provision for aircraft with the best possible performance in sufficient numbers to replace obsolescence and crash loss, and to increase the total number in accordance with the Treaty Navy Program; an adequate number of suitable tenders for patrol planes; continued improvement in performance of aircraft by a well considered experimental program; provision for adequate housing facilities for married Navy personnel attached to the Fleet Air Base, Coco Solo, C. Z.; and provision of the required increase in Naval personnel.

IX. DEFENSE AND ARMAMENT

NAVAL EDUCATION

BY CARROLL STORES ALDEN

HEAD OF DEPARTMENT OF ENGLISH AND HISTORY, U. S. NAVAL ACADEMY

INCREASED NAVAL DEMANDS

Two opposite forces have been strongly felt during the past year in the naval organization: keenness of competition, brought about by unsettled world affairs, which urges a reaching out for implements of warfare that are new, unusual, and more powerful; conservatism natural to navy men, inducing them to hold to methods, ships, and weapons that are tried and proved and not experimental.

The increased naval activity in virtually every land has decided the Administration to build up to what is almost the limit of our ratio earlier set by treaty, and to provide for a larger officer and enlisted personnel. The greater demands made of the fleet and the added duties assigned to officers and men already have resulted in a larger Naval Academy and the return to active operation of more training stations for enlisted men.

THE UNITED STATES NAVAL ACADEMY

Student Selection.—All students of the Naval Academy are designated as midshipmen and they have their appointment by reason of being properly nominated and meeting the entrance requirements. The following have the privilege of nomination: each United States Senator, Representative, and Delegate, 4 (these nominations are for the four years' course and further nominations are made only as vacancies occur on account of graduation, resignation, or dismissal); the Secretary of the Navy, 100 candidates selected annually by competitive examination from enlisted men in the fleet; and the President, 15 candidates selected annually by competitive examination commonly from sons of officers of Army, Navy, Marine Corps, Diplomatic Corps, etc. Further, there may be 25 appointed annually from the

Naval Reserve, and 20 annually from honor graduates of military schools and the Naval Reserve Officers Training Corps.

Qualifications.—Candidates must qualify as to age, being not less than 16 nor more than 20 on April 1 of the year they expect to enter, and further must pass a mental and physical examination. The former is similar to that of the leading scientific and technological schools. Since the spring of 1935 candidates, who have satisfactorily completed a year's work in an accredited university, college, or technological school and in the courses studied have met certain conditions, may be admitted on certificate without other examination.

Midshipmen.—A midshipman is an officer in a qualified sense. He is subject to the orders and regulations of the Navy Department and may be ordered to sea duty, although this is not customary except on summer practice cruises. Upon graduation he may be commissioned an ensign in the line of the Navy, or a second lieutenant of the Marine Corps. His pay begins on his being sworn in, \$65 a month, and 75 cents a day for rations. This used with care is sufficient to meet his ordinary expenses, to provide him with a small amount of travel money when on leave, and to furnish him on graduation with an outfit of uniforms required for a commissioned officer.

Courses.—The studies prescribed for the four-year curriculum are very nearly the same for all and they are comprised in the following academic departments: Seamanship and Navigation (including also aviation), Ordnance and Gunnery, Marine Engineering (including also mechanical drawing and naval construction), Electrical Engineering (including also chemistry and physics), Mathematics, English and History, Languages, Economics and Government, and Hygiene. The first four departments

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listed are distinctly professional and the instruction they give includes both the theoretical and the practical. Drills have an important place in the daily routine during the academic year from the last of September to the last of May, and they receive still more emphasis in the summer schedule. The midshipman in his first year, beginning ordinarily with June or July, spends the entire summer at the Naval Academy, where he is taught infantry drill, rowing, swimming, and firing on the rifle range. Two years later, when he is a member of the second class, the larger part of the summer he again passes at the Naval Academy and devotes himself to aviation, engineering, and navigation. In addition to ground-work instruction he has about ten hours of airplane flight, when he has charge of almost everything except handling of the controls.

Summer Cruises.—During the summer of 1936, besides the work in aviation, he cruised for a month in Chesapeake Bay and along the North Atlantic coast, five destroyers being assigned for this part of instruction so that one third of the second class could be taken at a time. During the same period a submarine was at the Naval Academy for the training and instruction of midshipmen while not on the destroyer cruise. During the other two summers of his course, spent away from the Naval Academy, he experiences real sea life as he embarks on what has been known since the Academy's early days as the "Summer Practice Cruise." Three battleships were assigned for this purpose in 1936—*Arkansas*, *Wyoming*, and *Oklahoma*. The cruise was to Europe and the squadron visited the ports of Portsmouth, Oslo, and Cherbourg, remaining six to seven days in each. Midshipmen were granted not only short leaves for visiting these cities but longer leaves so that they might take advantage of conducted or independent tours to London, Stockholm, Copenhagen, Paris, and the surrounding country.

Executive and Physical Training.—In addition to the nine departments earlier mentioned at the

Naval Academy there are the Executive and Physical Training Departments. The former has the direction of most of the activities of midshipmen connected with daily living, including all formations and infantry drills, extra-curricular interests, entertainments, maintenance of health and high moral standards, inculcation of responsibility and a sense of duty, and indoctrination in naval customs and principles of leadership. The latter department teaches swimming, correct posture, symmetrical physical development, and athletic sports. All midshipmen on graduation are awarded the degree of Bachelor of Science.

Faculty and Scholastic Aims.—The faculty of the Naval Academy is composed of officers from the fleet, detailed for two or three years as administrative officers or instructors, and also of civilian professors and instructors, who have a fair degree of permanency. Public lecture courses bring university professors and men of affairs distinguished in history, literature, economics, and government. The Naval Academy maintains high scholastic standards, but above all else it is a school of leadership. It aims to develop military and personal character, and exists as the present Superintendent has stated "to educate and train officers to fight the United States Fleet." Believing that the love of the sea is an essential characteristic of the successful naval officer, the present administration of the Academy has emphasized the water activities and has made every effort to improve the floating equipment for training and recreational purposes. To this end it has secured for the use of midshipmen additional small boats for drill in Seamanship, additional knockabouts for sailing, and also four 50-foot motor launches, ketch rigged, adapted for recreation and training in local cruising. Further, midshipmen have been encouraged to build their own small boats. As a result, there has come into existence a thriving boat club with a membership of more than 250 midshipmen.

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GRADUATE INSTRUCTION

Aviation Training.—Education for the naval officer continues long after graduation from the Naval Academy and obtaining a degree. Before each promotion in rank, a qualifying examination must be passed and at fairly regular intervals he has opportunity to attend special schools for advanced study. Incidental to the aviation training given to midshipmen during their last two years at the Naval Academy, is an examination to determine those who are physically qualified for aviation. In a graduating class of 265 in June, 1936, 55 were found to be qualified. Two years after graduation, ensigns interested in heavier-than-air aviation go to Pensacola and take an 11-months' course for pilots. Those interested in lighter-than-air aviation go to Lakehurst. During the last year, a total of 314 officers of the Navy and Marine Corps were under aviation training, and 148 qualified as naval aviators.

Post Graduate Placements.—Officers desiring to enter certain of the staff corps may volunteer after completing their first two years of sea duty. Those selected as assistant naval constructors are sent to the Massachusetts Institute of Technology for three years; those selected as assistant civil engineers are sent to Rensselaer Polytechnic Institute for three years; and those selected as assistant paymasters are sent to the Naval Finance and Supply School for one year. It is part of the general plan of the Navy Department to send all junior officers of the line on completing the first seven years of sea duty to the Postgraduate School of the Naval Academy to take the General Line Course, but the needs of the fleet and the shortage of officers combine to reduce the number. This past year 140 took the first year course and 92 were retained for the second year course. This instruction is to prepare officers for duties as heads of departments aboard ship and for general executive duties. The basic course is the same for all in professional subjects and also in Economics, American Diplomatic

Policy, and International Relations. This is supplemented by a special course in the field in which the officer is majoring: Navigation, Communications (Operations), Marine Engineering, Ordnance and Gunnery, Aeronautical Engineering, Radio Engineering, and Aerological Engineering. In addition the limited number continued at the school for a second year of specialization, a still smaller number are given a third year at various graduate schools of universities or technological schools. Certain officers on duty in the Judge Advocate General's Office, Washington, are designated to take a three-year course of law at George Washington University. A few especially qualified are sent to the Orient for a three-year course in the Japanese or the Chinese language, and a few also to Riga for a study of Russian. A large number also receive instruction to the end that they may obtain especial knowledge and skill in one of the following: submarines (New London, Conn.), torpedoes (Newport, R. I.), optical instruments (Navy Yards, Washington, D. C., and Mare Island, Cal.), and gyro compass (Navy Yards, New York and Mare Island, Cal.).

The Naval Finance and Supply School, established in 1934 at the Navy Yard, Philadelphia, trains line officers for the Supply Corps. Twenty-seven officers during the past year completed the course of instruction and the Department plans, for the next few years, annually to order 45 to attend the school.

THE NAVAL WAR COLLEGE

Three courses constitute the work of the Naval War College at Newport, R. I.: the junior course (for officers below the rank of commander) in the minor operations of war; the senior course (for commanders, captains, and rear admirals) in handling and maintaining large fleets over extended theaters of war and in fleet engagements, and the advanced course (for senior captains and flag officers) in planning, and in joint army and navy operations. A few army and marine officers attend

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the Naval War College at Newport and a few naval and marine officers attend the Army War College at Washington. The Naval War College also has as one of its minor activities the conducting of correspondence courses in International Law and in Strategy and Tactics, which are issued to officers in the fleet and at shore stations as they request them.

ENLISTED MEN

Recruits.—The naval appropriation act for the fiscal year 1936 provided pay, subsistence, and transportation for an average enlisted strength of 88,000 men. There were 18,039 first enlistments and the men were selected from applicants totaling 181,489. Of those whose term of enlistment terminated during the year 83.67 per cent reenlisted, as compared with 80.86 per cent in 1935. The recruits have their training at one of four stations, Norfolk, Va., San Diego, Calif., Great Lakes, Ill., and Newport, R. I. The initial course for all extends over 12 weeks and is concerned with the following: (a) personal cleanliness, (b) care of clothing, (c) infantry drill, (d) rowing, (e) swimming, and (f) small arms. Upon its completion, a certain number who have shown especial aptitude are selected for the service schools to receive training as will be indicated. The others are sent aboard ship to continue their training. After four months of training they may be advanced from the rating apprentice seaman to seaman second class or fireman third class.

Service Schools.—There are three large classes of service schools. "Class A Schools" provide elementary instruction to recruits that will make them immediately useful on board ship and give them the groundwork for the lowest petty officer ratings. The length of courses is from 16 to 20 weeks, except for the School of Music, which continues 104 weeks. One group is studying for ratings such as electrician's mate, gunner's mate, torpedo man, etc.; another group for ratings as radio man, quartermaster, yeoman, etc.; and still an-

other for ratings as machinist's mate, blacksmith, aviation carpenter's mate, etc. "Class B Schools" supplement the training afloat by giving advanced instruction ashore. Courses, from six to 40 weeks' duration, are in fire control, torpedo, electrical interior communication, gyro compass, cooking, stenography, etc. "Class C Schools" give advanced training for particular duty assignments in special subjects not normally a part of shipboard instruction. Courses from four to 34 weeks duration are for the following: aerographers, deep sea divers, dental technicians, aviation ordnance men, submarine men, optical men, etc. Included in the Class C division is the Naval Academy Preparatory School at Norfolk, Va. One hundred enlisted men, if they can qualify in all particulars, are appointed midshipmen in the Naval Academy. As they must pass the same examinations as other candidates, this school affords a needed opportunity for preparation.

THE NAVAL RESERVE

The Naval Reserve is designed to provide the necessary officers and men for the war time increase of naval activities during the first 120 days after mobilization. After this time it is expected that additional requirements will be taken care of by various training stations and schools now in existence or to be set up in case of national emergency. Each naval district has been assigned a quota of Naval Reserve officers and men of the various classes for procurement and assignment to mobilization stations. There was on June 30, 1936, a total of 10,828 officers and 34,333 men in the Naval Reserve. The actively drilling organizations of the Fleet Reserve, originally apportioned on a population basis, are located in 85 cities of the continental United States, and one in Hawaii. Inspections of the various seagoing and aviation units is made annually by a board of regular naval officers. The Naval Reserve is divided by law into three classes: Fleet Naval Reserve, Volunteer Naval Reserve, and Merchant Ma-

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rine Naval Reserve. Training for members of the Naval Reserve varies according to class and is given by means of instructional literature, correspondence courses, drills, and short periods of active duty.

Naval reserve officers' training corps units have been established at Harvard, Yale, Northwestern, Georgia School of Technology, University of California, and University of Washington. With the exception of the first mentioned all have filled their quotas of 200 students and the aggregate of applications has greatly exceeded the quotas. The course in Naval Science and Tactics consists of navigation and nautical astronomy, ordnance and gunnery, engineering, communications, seamanship, naval history, and naval traditions. Completion of this course by the students who have entered the corps is a requirement for graduation from the university, and the credits count for the bachelor's degree. An important part of the course is the summer practice cruise. On the West Coast, the freshmen and sophomores from the University of Washington and the University of California cruised in the battleship *New York*, and the juniors in destroyers, all to Honolulu. On the East Coast, the sophomores and juniors from Harvard, Yale, Northwestern, and Georgia School of Technology cruised in destroyers to Panama, Guantanamo, and New York.

There were 234 graduates in June, 1936. Of this number, 213 were commissioned in the Naval Reserve; two in the Naval Reserve (Supply Corps); three in the Marine Corps; and four in the Marine Corps Reserve.

APPOINTMENT, SELECTION, PROMOTION

The education, whether of the midshipman, the officer, or of the enlisted man, is never finished, and the

advancement of each is dependent in no small degree on his ability to see what lies beyond and to master that. The principle of selection of those who shall be promoted extends throughout almost the entire organization. Of candidates for appointment as midshipmen in the Naval Academy, only about one in three who take the entrance examinations succeed in passing; and when the physical examination further takes its toll, one out of about 12 of these is rejected. In June, 1936, 262 midshipmen were graduated, this out of a class that numbered on entrance (with additions from other classes) 350. Of these 216 were commissioned as ensigns of the line and 25 as second lieutenants in the Marine Corps—almost exactly two out of the three that originally entered. The larger number of those who fell by the way were separated because of scholastic or physical deficiencies. Major and minor hazards, such as the examination boards and selection boards, will threaten or spur on the 216 ensigns as they advance to the rank of lieutenant (junior grade), lieutenant, lieutenant commander, and commander. Those who survive selection, natural and legislative, till they reach the rank of captain and rear admiral must show unusual ability, fitness, and vigor.

For the enlisted men, selection begins in the recruiting office. As already shown, only one in 10 of the applicants is accepted. The superior quality of those now being chosen is shown by reports from the training stations and the fleet. A large majority have had one or more years of high school and many have gone through to graduation. Losses from discharge due to bad conduct and from desertion have grown less and less. The gain, however, most important of all to the Service consists in the increased efficiency of its personnel.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

SERVICE SOCIETIES

AMERICAN LEGION, National Headquarters, 777 N. Meridian Street, Indianapolis, Ind.

AMERICAN REMOUNT ASSN., 810 18th Street, N. W., Washington, D. C.

ARMY ORDNANCE ASSN., Mills Bldg., 17th St. and Pennsylvania Ave., Washington, D. C.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, Army Medical Museum, Washington, D. C.

CHEMICAL WARFARE SERVICE, Edgewood Arsenal, Maryland.

MILITARY TRAINING CAMPS ASSN., 7 West 96th Street, New York City.

NAVY LEAGUE OF THE UNITED STATES, Mills Building, Washington, D. C.

QUARTERMASTERS' ASSN. OF THE UNITED STATES, 923 15th Street, N. W., Washington, D. C.

RESERVE OFFICERS ASSN. OF THE UNITED STATES, 1653 Pennsylvania Ave., N. W., Washington, D. C.

SOCIETY OF AMERICAN MILITARY ENGINEERS, 808 Mills Bldg., Washington, D. C.

SOCIETY OF NAVAL ARCHITECTS & MARINE ENGINEERS, 29 W. 39th Street, New York City.

UNITED STATES CAVALRY ASSN., 1624 H Street N. W., Washington, D. C.

UNITED STATES FIELD ARTILLERY ASSN., 1624 H Street N. W., Washington, D. C.

UNITED STATES INFANTRY ASSN., 1115 17th Street N. W., Washington, D. C.

UNITED STATES NAVAL INSTITUTE, Annapolis, Md.

PATRIOTIC AND HEREDITARY

COLONIAL DAMES OF AMERICA, 421 E. 61st Street, New York City.

DAUGHTERS OF 1812 U. S. NATIONAL SOCIETY, 1461 Rhode Island Ave., N. W., Washington, D. C.

GENERAL ORGANIZATION, SONS OF CONFEDERATE VETERANS, 609 Law Bldg., Richmond, Va.

GENERAL SOCIETY OF COLONIAL WARS, 1500 Walnut St., Philadelphia, Pa.

GENERAL SOCIETY OF MAYFLOWER DESCENDANTS, 420 Lexington Ave., New York City.

FOUNDERS AND PATRIOTS OF AMERICA, Fifth Ave. and 59th St., New York City.

NATIONAL SOCIETY OF THE DAUGHTERS OF THE AMERICAN REVOLUTION, Memorial Continental Hall, Washington, D. C.

MILITARY ORDER OF FOREIGN WARS OF THE U. S., 4 West 43d. Street, New York City.

MILITARY ORDER OF THE LOYAL LEGION, 4 West 43d. Street, New York City.

MILITARY ORDER OF THE WORLD WAR, 4 West 43d. St., New York City.

NATIONAL SECURITY LEAGUE, 45 West 45th Street, New York City.

NATIONAL SOCIETY OF THE SONS OF THE AMERICAN REVOLUTION, 1222 16th St., N. W., Washington, D. C.

NAVAL AND MILITARY ORDER, SPANISH-AMERICAN WAR VETERANS, 184 State House, Boston, Mass.

PILGRIM SOCIETY, Pilgrim Hall, Court Street, Plymouth, Mass.

SOCIETY OF THE CINCINNATI, 136 W. Lanvale Street, Baltimore, Md.

SONS OF UNION VETERANS OF THE CIVIL WAR, Room 5, City Hall, New York City.

UNITED CONFEDERATE VETERANS, 1528 Lowerline St., New Orleans, La.

UNITED SPANISH WAR VETERANS, Woodward Building, Washington, D. C.

VETERANS OF FOREIGN WARS, 1624 H St., N. W., Washington, D. C.

PART FOUR

ECONOMICS AND BUSINESS

DIVISION X

BUSINESS AND FINANCE

ECONOMIC AND BUSINESS CONDITIONS

By S. S. HUEBNER

PROFESSOR, UNIVERSITY OF PENNSYLVANIA

MARKED IMPROVEMENT

In THE AMERICAN YEAR BOOK for 1935 it was stated that "business improvement of 1933 and 1934 could only be characterized as slightly better" than 1932, the year "the bottom of the memorable depression was reached." "During 1935, and especially during the last half of the year, most of the important indices of trade have shown a distinct and consistent improvement, while in certain directions like retail business and automobile manufacturing operations reached the proportions of fairly good times. The chief laggards still are the heavy industries, but even here there was a reawakening which seems to augur well for the future." The distinct and consistent improvement in most of the important indices of business which became apparent during the latter half of 1935 has continued with only minor interruptions during the entire year 1936. In many respects, particularly from the point of view of industrial production, the improvement has been the best since the depression began. Industrial output, trade, commodity prices, and employment, reached new high levels for the depression period; and, in some lines of industry, 1929 levels were exceeded. Probably the most encourag-

ing single factor was the substantial, although belated, awakening of the heavy industries. The marked and steady business improvement was reflected in the prices of securities, which, with the exception of a reaction in May, increased steadily in each month throughout the year.

SUMMARY OF GENERAL BUSINESS CONDITIONS

General business conditions during 1936 were summarized very well in the following statements taken from the monthly bulletin of the National City Bank of New York for January, 1937:

"The year 1936 has closed with business at the highest level since the depression began, and 1937 opens with great expectations. There are few industries in this country, and few sections of the world, in which conditions have not shown pronounced improvement. Industrial output as a whole has almost regained the 1929 average, with the Federal Reserve index for November at 114 (1923-25=100); and in an impressive list of industries making goods of everyday use the 1929 peak has been surpassed. These include not only industries which are still in a rapid stage of growth, such as rayon, plastics, and various kinds

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of electrical merchandise, but also cotton textiles, shoes, petroleum products, tobacco, glass and some divisions of the paper industry. Steel and automobile output have both been greater than in any year except 1928 and 1929, and during recent weeks steel mill operations, at almost 80 per cent of capacity, have been the largest on record at this season of the year.

"Compared with 1935, the increase in industrial production during 1936 has averaged 15 per cent. Railway freight loadings and electrical power consumption rose approximately as much, and the latter set an all-time high record.

"Demand for raw materials has increased greatly, and prices are sharply higher. Bituminous coal production in 1936 was 16 per cent, and copper deliveries 50 per cent, over 1935. Imports of rubber, wool and other industrial materials, as well as foods from abroad, were larger. Exports of manufactured goods rose 16 per cent. Total domestic retail trade expanded during the year by an estimated 14 per cent, and the Christmas sales of department stores were larger by about the same figure, according to early reports.

"Employment and payrolls are substantially greater, and the earnings of both agriculture and the industries are better. Property values of all kinds have advanced. The work of improving and adding to productive equipment has begun to go forward again, stimulated both by better trade and growing confidence. Although the amount of new capital raised and bank credit used by business continues very low, the year has seen a fair increase in both totals.

"Moreover, these evidences of recovery supply proof that the maladjustments which caused and prolonged the depression are being overcome, and that the changes required to adapt business so that it can go ahead under new conditions are being made. The progress of the past year has been not only in enlarging the volume of business, but in improving economic conditions so that further gains can be achieved.

"For four years the economic system has been pulling itself together. In that period short crops have wiped out the accumulated surpluses of farm products, and farm income has been restored to such effect that farmers of this country, according to the Bureau of Agricultural Economics, have had in 1936 the highest real purchasing power in thirteen years; this of course does not refer to income stated in dollars, which was below 1929, but is after allowing for the greater buying power of the dollar. In the industries endless technical progress has been made, permitting them, while paying higher wages, to set prices which would sell goods; and the wear and tear of the depression and unsatisfied wants have built up deferred needs, which require increased manufacturing activity and greater consumption of raw materials as the recovery makes headway."

INDUSTRY

Production.—Industrial production, already referred to, as represented by the Federal Reserve Board's index for November, reached 114 per cent of the 1923-25 average (which equals 100) as compared with 119, the 1929 peak. In October, 1936, the percentage was 109 as compared with a percentage production of 95 per cent for October, 1935 (comparable November figures not being available). This improvement was greatest in the automobile, steel, apparel, leather, paper, rayon, cotton goods and chemical industries. The poorest showing occurred in anthracite mining, quarrying, brick, tile and terracotta, saw-mill and railway repair shops.

Durable Goods.—Expansion in the durable goods industry for the first ten months of the year resulted in the production of about 38,000,000 tons of steel ingots, which is about one-third more than that produced during the like period of 1935, and about three times the production for the same part of 1932, the low year of the depression period. Although this represents the highest production

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since 1930, it is about 10,000,000 tons less than that of 1929. According to Standard Statistics' monthly averages for the entire industry, steel operations for the first 11 months of 1936 averaged about 67.7 per cent of capacity, with a low of 51.4 per cent in January and a high of 79.1 per cent for November, the latest month for which figures are available.

The automobile industry continued to use more steel than any other industry, as it has for the past six to eight years. Cars produced during the ten months, January to October, reached 3,561,000 units and production during the final two months of the year will probably have increased the total to 4,400,000 vehicles. This figure exceeds that for 1935 by about one million.

The rubber industry experienced its best year since 1929, both from the sales and profits standpoints. This was due to general business improvement, the absence of price wars in the industry and increased production of motor vehicles, as indicated above. Tire sales in 1936 reached about 52,000,000 units, compared with 49,000,000 in 1935.

Construction.—In the field of building construction the improvement which started in 1935 continued with substantial gains in 1936. Building contracts awarded, as shown by the F. W. Dodge Corporation's reports, increased 57 per cent in the first 11 months, with the greatest gain in residential construction, which was up 70 per cent. Contracts for new buildings awarded for October, 1935, totalled \$200,000,000, while the total for the corresponding month of 1936 was \$225,000,000. For the first ten months of 1936 the total awards amounted to about \$2,400,000,000 as compared (for similar periods) with approximately \$1,400,000,000 for 1935, \$1,300,000,000 for 1934, and \$800,000,000 for 1933, the low point of the depression for the building industry. Compared with more than \$5,000,000,000 for a like period in 1929, it can be seen that, while construction activity is increasing, it has been slower

to recover than many other lines. The lag in commercial, industrial and public utility construction has been pronounced, while the greatest improvement has taken place in residential construction. The recent expansion in business, however, should stimulate construction during 1937 because additional production facilities will be needed before long.

Railroad Traffic.—Improved business conditions have been reflected in an increase in the freight traffic handled by the railroads. In October (the latest month available) average weekly freight-car loadings amounted to 819,000 as compared with 713,000 in October, 1935. For the first ten months of 1936 freight-car loadings were slightly more than 30,000,000 as compared with about 27,000,000 in the same period of 1935, about 24,000,000 for 1932, and about 42,000,000 in 1929.

EMPLOYMENT

Factory employment and payrolls expanded as a result of increased production, but unemployment is still the major problem of the depression. In a number of industries, some in which production was less in 1936 than it was in 1929, employment has exceeded the figure for that year. At the end of October, 1936 factory employment, as represented by the *Survey of Current Business*, stood at 92.1 per cent, and payrolls at 86.5 per cent (1923-25=100). These figures (unadjusted) compare with 85.3 and 74.3 per cent, respectively, for October, 1935. Increases in employment throughout the year 1936 were steady and in comparison with the same period of 1935, employment increased by more than 1,000,000 workers. The situation is still acute, however, mainly because the number of available workers in certain classes has greatly increased during the depression.

COMMERCIAL FAILURES

Commercial failures for 1936 reached a new low level for the depression. According to Dun and Bradstreet figures, insolvencies during November numbered 688 as com-

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pared with 611 in October and 927 in November, 1935. The 688 was the smallest number in any November since 1919. For the first 11 months of 1936 the total was 8,946 as compared with 10,939 in the same period of 1935, or a decrease of more than 23 per cent. The same favorable showing is made if liabilities are considered and the conclusion is obvious that liquidation of the depression is now practically completed.

FOREIGN AND DOMESTIC TRADE

Merchandise exported during the first ten months of 1936 amounted to \$1,998,000,000. In the same period for 1935, merchandise exported amounted to \$1,790,000,000 and in 1932 the corresponding figure was \$1,298,000,000. Imports of merchandise in the first ten months of 1936 amounted to \$1,977,000,000, compared with \$1,691,000,000 in 1935 and \$1,122,000,000 in 1932. The excess of exports in the first ten months of 1936 was only \$21,000,000, as compared with an excess of \$235,000,000 in the same portion of 1935 and \$478,000,000 in 1934.

Domestic trade, as represented by department store sales, chain store sales, etc., amounted to the best figures since 1929. Thus, as given by the *Survey of Current Business* in October, 1936, the adjusted department store sales index was 90 per cent (1923-25=100) as compared with the October, 1935 figure of 78 per cent. Similarly, the general merchandise monthly average for rural sales

for the same periods (with 1929-31=100) was 127.1 per cent and 104.6 per cent, respectively.

FINANCE

New capital financing for 1936 (first ten months) totalled almost \$900,000,000 as compared with about \$317,000,000 for a like period in 1935 and much lower amounts in the years 1931 to 1934. While revival in this field which showed plainly in 1935, continued with greater vigor in 1936, the latest figures represent only a fraction of that which might be expected in a more normal year.

YEARLY TOTALS

	Capital	Refunding
1936....	\$ 887,668,000*	\$2,854,363,000*
1935....	403,569,958	1,863,858,807
1934....	178,257,949	312,836,500
1933....	160,717,178	220,866,478
1932....	325,361,625	318,533,720
1931....	1,763,448,723	825,516,700
1930....	4,944,403,166	528,875,877
1929....	8,639,439,560	1,386,921,569
1928....	6,079,602,416	1,738,274,615
1927....	5,391,008,544	1,928,187,260
1926....	4,357,002,720	942,550,970
1925....	4,100,725,167	637,384,524
1924....	3,322,295,764	516,275,300
1923....	2,712,996,155	530,345,942

*For ten months.

Bank debits outside New York City for the first ten months of 1936 approximated \$175,000,000,000 as compared with about \$165,000,000,000 in the same 1935 period. In 1933, the lowest year, these debits amounted

CORPORATE FINANCING

(Source of Data—*Survey of Current Business*
and *Babson's Statistical Service*)

	1935		1936	
	Capital	Refunding	Capital	Refunding
January.....	\$ 5,267,000	\$ 2,459,000	\$ 72,935,000	\$200,973,000
February.....	6,500,000	23,291,000	13,473,000	181,141,000
March.....	7,945,000	112,220,000	58,816,000	536,037,000
April.....	21,988,000	133,890,800	127,879,000	559,872,000
May.....	45,193,334	81,566,666	37,608,000	267,385,000
June.....	13,676,000	115,488,000	151,874,000	375,756,000
July.....	55,089,670	486,885,330	69,809,000	224,583,000
August.....	29,794,800	180,066,700	170,799,000	61,639,000
September.....	45,086,920	230,767,000	74,590,000	175,460,000
October.....	73,002,811	179,392,421	109,885,000	271,517,000
November.....	33,288,860	217,214,540
December.....	66,737,563	100,617,350

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to about \$120,000,000,000 (first ten months) and in 1929, the highest year, they were roughly \$250,000,000,000.

The inflow of gold, present during the entire year of 1935, continued during 1936. Gold imports exceeded exports in nine out of the first ten months of 1936, with imports during this period amounting to \$1,017,000,000 compared with \$1,338,000,000 in the same part of 1935 and \$963,000,000 in 1934. These increased amounts of gold have had the immediate effect of increasing bank reserves of member banks of the Federal Reserve System. In order to prevent any unwise use of surplus funds thus made available, Federal Reserve authorities increased member bank reserve requirements in August, 1936, by about 50 per cent. Later in the year another plan was adopted for the purpose of sterilizing the incoming gold shipments.

SECURITIES

The pronounced rise in share prices which occurred in the last nine months of 1935 continued through 1936, with the exception of a temporary decline in May. The stock price index of all listed shares on the New York Stock Exchange (*New York Stock Exchange Bulletin*) for December, 1935 was 45.85. The same price index for December, 1936 was 56.01. All major groups participated in the rise, but with considerable difference in extent. Railroad shares (using Standard Statistics' averages) appreciated from a low of 47 in January to 60.8 in November (the latest month available) or an increase of almost 30 per cent. During the same period industrial stocks experienced an increase from 129.1 to 166.2, an increase of about 21 per cent. Public utility stocks, likewise rose from 88.4 to 96.6, an increase, however, of not quite 10 per cent. The rise, as stated before, was fairly steady throughout the year, the only worthwhile exception occurring in May. The confidence created by this rise in 1936, added to the pronounced upward movement in 1935 should greatly increase expectations of fur-

ther substantial improvement in the future. As a discounter of the business future, such stock movements indicate much better times are ahead. The prices of high grade bonds remained stable at the high levels at which they began the year, with a tendency toward increased prices in some of the more speculative issues.

Short term money rates remained practically unchanged, except for an increase from $\frac{3}{4}$ to 1 per cent in the call loan rate (occurring in April and May) and a slight increase in the discount rates on the weekly Treasury bill issues. (see "The Security and Money Markets," pp. 350-55.)

COMMODITY PRICES

As indicated by Bradstreet's index for wholesale prices, 1936 experienced a decline from 10.36 in January to 9.85 in July and then a rise to 10.22 in November. This compares with a rise from 9.49 in January, 1935, to 10.28 in November of that year. The average, however, for 1936, when published will no doubt be above that of 9.92 for 1935. Since the low of 7.09 in December, 1932, this index has been gradually increasing.

The rise in staple commodity prices, as explained by the *National City Bank Bulletin* for January, 1936, has been "one of the most important developments in 1936, and one holding great promise for 1937. The advance in farm products and other raw materials during the twelve months has averaged around 25 per cent, and this is a world rise, in terms of all currencies and of gold as well. Farmers and other producers will have the first benefit, for they will receive higher prices, and also will probably be able to sell more; but the resulting increase in purchasing power, if not absorbed by rises in industrial prices and costs, will flow around the circle, creating business for everyone."

The following table (contained in the aforementioned *Bulletin*) shows the prices of a number of important staple commodities in representative American markets:

ECONOMIC AND BUSINESS CONDITIONS

SPOT COMMODITY PRICES

Commodity	Dec. 26, 1936	Year Ago	10-year High	10-year Low
Steel Scrap.....	\$19.25	\$14.25	\$19.25	\$ 8.25
Copper.....	11.63¢	9.25¢	23.87¢	4.87¢
Tin.....	51.75¢	49.00¢	72.50¢	18.35¢
Lead.....	6.02¢	4.53¢	9.50¢	2.65¢
Zinc.....	5.45¢	4.85¢	8.75¢	2.30¢
Cotton.....	12.99¢	12.05¢	23.90¢	5.00¢
Wool.....	\$ 1.07	81.00¢	\$ 1.28	36.50¢
Silk.....	\$ 1.96	\$ 1.94	\$ 6.91	\$ 1.05
Wheat.....	\$ 1.41	\$ 1.09	\$ 2.15	45.75¢
Corn.....	\$ 1.08	58.50¢	\$ 1.17	21.00¢
Rubber.....	21.75¢	13.25¢	88.50¢	2.56¢
Sugar, raw.....	2.87¢	2.20¢	3.50¢	.57¢
Cocoa.....	11.55¢	5.15¢	17.75¢	3.55¢
Hides.....	14.00¢	11.25¢	26.50¢	3.75¢
Lard.....	13.95¢	10.75¢	19.23¢	4.10¢
Steers.....	10.83¢	11.12¢	16.09¢	4.71¢
Hogs.....	10.31¢	9.36¢	14.41¢	2.69¢
Coffee.....	11.13¢	8.50¢	24.57¢	7.00¢

INDEX NUMBERS OF COMMODITY PRICES

(Source of U. S. Dept. of Labor—Survey of Current Business)
 (Source of Bradstreet—Standard Trade & Securities, *Statistical Bulletin*)
 (Source of U. K. Board of Trade—Barclay's Bank Ltd. *Monthly Review*)

	U. S. Dept. of Labor		Bradstreet		U. K. Board of Trade	
	1935	1936	1935	1936	1935	1936
January.....	78.8	80.6	9.49	10.36	88.3	91.8
February.....	79.5	80.6	9.78	10.02	88.0	91.7
March.....	79.4	79.6	9.80	9.92	86.9	91.7
April.....	80.1	79.7	9.66	9.85	87.5	91.9
May.....	80.2	78.6	9.80	9.82	88.2	91.9
June.....	79.8	79.2	9.91	9.74	88.4	92.6
July.....	79.4	80.5	9.84	9.85	88.0	93.6
August.....	80.5	81.6	9.92	10.14	88.4	95.2
September.....	80.7	81.6	10.01	10.19	89.6	96.1
October.....	80.5	81.5	10.18	10.27	91.1	97.6
November.....	80.6	.....	10.28	10.22	91.2	.....
December.....	80.9	.....	10.40	11.1360	91.4	.....

YEARLY AVERAGE

(Bradstreet)

1903.....	7.94	1918.....	18.7117
1904.....	7.92	1919.....	18.6642
1905.....	8.09	1920.....	18.8096
1906.....	8.41	1921.....	11.3695
1907.....	8.90	1922.....	12.1186
1908.....	8.00	1923.....	13.4028
1909.....	8.51	1924.....	12.8672
1910.....	8.98	1925.....	13.9445
1911.....	8.7129	1926.....	13.0207
1912.....	9.1867	1927.....	12.7788
1913.....	9.2115	1928.....	13.2824
1914.....	8.9985	1929.....	12.6685
1915.....	9.8531	1930.....	10.7450
1916.....	11.8236	1931.....	8.7596
1917.....	15.6385	1932.....	7.0956
		1933.....	7.86
		1934.....	9.22
		1935.....	9.92
		1936.....	10.0989

X. BUSINESS AND FINANCE

THE SECURITY AND MONEY MARKETS

By S. S. HUEBNER

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GENERAL CONDITIONS IN SECURITIES TRADING

The security market of 1936 witnessed a repetition of the broad upward movement experienced during 1935. In November stocks pushed through the 1927 average level and the market advanced to the highest point since 1931. Bond prices also showed marked improvement. The volume of transactions in the stock market increased materially although it was still far below the record year of 1929.

Toward the end of the year there was evident a tightening of control over the exchanges by the Securities and Exchange Commission notably in its attitude towards segregation of the functions of dealers and brokers, the adequate margining of accounts by all members trading on or off the floor for their own accounts, and the trading by members or their partners when the firm carries margin accounts for customers. Funds for speculation were exceedingly plentiful at all times yet the increase in brokers' loans in view of the great rise in prices was negligible. The market was distinctly a cash market and no doubt many holders of bonds refunded at lower rates of interest turned to equities to secure a more favorable return.

In view of the great gain in stock prices, some writers are inclined to believe that a breathing spell is in order although there is at present nothing in the underlying conditions that would seem to prevent a further substantial rise. Among the factors that were directly or indirectly responsible for the rise may be mentioned the prospect of greatly increased production in order to make up for deficiencies accumulated during the depression years, the large volume of lendable funds, low money rates, the great demand of foreign

buyers for American securities, the gradual opening of foreign markets, the better balance attained between agriculture and industry, the more hopeful outlook relative to the balancing of the Federal budget, the tripartite agreement among the United States, England and France for the stabilization of their currencies, and the effect of the tax on undistributed earnings upon the dividend policies of corporations. During 1936, according to *The New York Times* report, cash dividend declarations amounted to \$4,122,725,360 compared with \$2,942,672,386 in 1935 and \$2,684,711,575 in 1934.

Among the factors that are detrimental to continued economic improvement are the possibility that fiscal stability will not be achieved because of the great pressure to continue government disbursements on a large scale, the possibility of war, and the unrest of labor manifested by strikes for higher wages and a reduction in working hours.

THE MARKET RISE OF 1936

The extent of the rise during 1936 may be indicated by the monthly average of the Standard Statistics Company. Based upon the composite average of 90 stocks, the market rose from 109.3 in January to 137.8 in November, a gain of about 26 per cent. If the industrial average alone is used a clearer picture is obtained, since special conditions have affected both the railroad and utility groups. Industrial stocks advanced from 129.1 in January to 166.2 in November, a gain of almost 29 per cent. This compares with an increase in the 1935 industrial average of from 88.4 in January to 123.3 in December, or 40 per cent. Beginning with March, 1935, the monthly industrial averages rose without interruption, except for a recession in May, 1936, from 81.6 to

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166.2, a gain of almost 104 per cent. Measured from the low point of 37.9 in June, 1932, there has been a rise of 128.3 points, or nearly 339 per cent. The monthly averages for December are not available at the time of writing, but they will indicate a slight decline below the November prices. But it should again be remembered, as was pointed out last year, that the present price level is in dollars representing a devaluation of slightly over 40 per cent as compared with the dollar before its devaluation. In other words, a proper interpretation of the rise since 1932, the low in this depression, must not leave out of consideration the fact that the present quotations reflect a larger number of smaller dollars to counteract the devaluation which occurred in the precious metal of our medium of exchange since the hectic days of 1932.

Attention must also be directed, as was necessary last year, to the unevenness of the rise as regards the various groups of stocks. In other words, the market was highly selective, and various groups of stocks showed a substantial realignment in prices. Rails and utilities did not fare as well as industrials. While the rails did fairly well, they lagged toward the close of the year because of the failure of the Interstate Commerce Commission to extend the emergency freight rate structure. Utilities, despite the continued expansion of electric power, were not in favor because of the uncertainty of governmental interference. Certain groups, like various metal stocks, motor stocks, chemical stocks, farm implement stocks, rubber and tire stocks, merchandising stocks, railroad equipment stocks, cotton textile stocks, and many heavy industry stocks did exceedingly well. Stocks that were backward include sugar producing and refinery, air transport, can manufacturing, tobacco and foods.

MARKET VALUE OF STOCKS AND BONDS

As explained last year, the *New York Stock Exchange Bulletin* (De-

cember, 1936) placed the total market value of listed stocks on the New York Stock Exchange at \$46,945,581,555 on Jan. 1, 1936. This market value rose from \$30,936,100,491 in April, 1935 to \$51,667,867,515 in April, 1936. After a decline in May, 1936, the market value again showed an uninterrupted increase and as of Dec. 1, 1936, it was \$60,019,557,197. In round figures the consistency of the rise is indicated by the following totals: For May, \$47,800,000,000, June, \$50,000,000,000, July, \$50,900,000,000, August, \$54,100,000,000, September, \$54,500,000,000, October, \$55,100,000,000, November, \$58,500,000,000, while for Dec. 1, 1936, the total market value stood at \$60,019,557,197. This represents an increase of over \$13,000,000,000 as compared with January of the year, or slightly less than 28 per cent.

The average monthly stock price index, as published by the *New York Stock Exchange Bulletin*, ranged from 47.00 in January, 1936, to 51.06 for April, 47.27 for May, 49.03 for July, 51.89 for September, 54.37 for November, and 56.01 for December. These averages compare with the following December averages for preceding years as follows: 45.85 for December, 1935, 35.59 for 1934, 32.78 for 1933, 25.61 for 1932, 34.24 for 1931, 55.53 for 1930, 68.44 for 1929, and 97.80 for 1928.

All American bonds listed on the New York Stock Exchange showed a total market value of \$33,649,635,655 on Jan. 1, 1936. This value rose during January, February, March and April, at which time it was \$36,176,977,761. After falling to \$35,921,647,290 for May, the total, with the exception of a slight recession in November, continued to increase and on Dec. 1 reached \$40,256,659,611, an increase of \$6,600,000,000 compared with January of the year, or approximately 19.6 per cent. Near the close of the year (Dec. 1) the average price for 1,092 issues stood at 100.55, which compares with 94.47 and 97.63 for Jan. 1 and July 1 of the year, and with the following for Dec. 1 of the previous

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years: 93.69 for 1935, 91.68 for 1934, 82.98 for 1933, 81.36 for 1932, 84.13 for 1931, 96.51 for 1930, 96.80 for 1929, 98.69 for 1928, and 101.26 for 1929.

VOLUME OF STOCK TRANSACTIONS

While still far below the turnover in 1929, the volume of transactions for 1936 on the New York Stock Exchange increased considerably over the volume for the previous year. Nevertheless, the comparative dullness is surprising in view of the long sustained and consistent rise in prices beginning in April, 1935. The monthly record of sales shows that January had the greatest turnover with 67,200,000 shares. Each succeeding month declined until the smallest volume of the year, 20,600,000, was reached in May. The monthly record of sales thereafter ranged between 21,400,000 and 50,500,000, the totals increasing somewhat irregularly and reaching their high point in November. The largest day was on Feb. 17 with a volume of 4,700,000, compared with the record of 16,400,000 on Oct. 29, 1929. On 21 days the trading exceeded 3,000,000 shares.

Shares sold on the New York Stock Exchange totalled 496,063,099 for 1936 (as reported by *The New York Times*), as compared with 381,666,197 for 1935, 323,871,840 for 1934, 655,000,000 for 1933, 425,000,000 for 1932, 577,000,000 for 1931, 811,000,000 for 1930, 1,125,000,000 for 1929, and 313,000,000 for 1919, the highest record of the preceding industrial cycle. But as previously explained, the high rise in the number of shares dealt in during 1929 and 1930 is partly attributable to the substantial increase in the number of additional shares listed on the New York Stock Exchange, such increase being indicated by the fact that whereas the number of listed shares totalled 735,000,000 in 1928, the total increased in 1929, 1930, and 1931 respectively to 1,114,000,000, 1,297,000,000, and 1,319,000,000. The volume of transactions during 1933 and thereafter, however, is not influenced by this factor. At the beginning of 1932 the total shares

listed on the New York Stock Exchange amounted to 1,319,000,000, whereas at the present time (Dec. 1, 1936) the total stands at 1,353,000,000. On the New York Curb Market sales also showed much the same tendency, the total sales standing at 134,505,332 (*The New York Times* report) shares as compared with 75,850,188 for 1935, 59,888,426 for 1934, 100,653,001 for 1933, and 56,997,581 for 1932. The 1936 total compares with 110,000,000 shares for 1931, 222,000,000 for 1930, and 474,000,000 during 1929.

SHARES TRADED ON THE NEW YORK STOCK EXCHANGE (*New York Stock Exchange Bulletin*)

	1935	1936
January.....	19,409,132	67,201,745
February....	14,404,525	60,884,392
March.....	15,850,057	51,016,548
April.....	22,408,575	39,609,538
May.....	30,439,671	20,613,670
June.....	22,336,422	21,428,647
July.....	29,427,720	34,793,159
August.....	42,925,480	26,563,970
September...	34,726,590	30,872,559
October.....	46,658,488	43,995,282
November...	57,459,775	50,467,182
December....	45,589,317	.....

YEARLY TOTALS (Shares of Stock)

1919.....	316,787,725
1920.....	226,640,400
1921.....	172,712,716
1922.....	258,652,519
1923.....	236,115,040
1924.....	281,991,597
1925.....	454,404,733
1926.....	450,845,255
1927.....	576,563,218
1928.....	919,661,825
1929.....	1,124,991,490
1930.....	810,038,161
1931.....	576,921,426*
1932.....	425,235,829*
1933.....	654,874,210*
1934.....	323,871,840*
1935.....	381,666,197*
1936.....	496,063,099*

* (From *The New York Times*).

SHARE PRICES

Industrials.—The movement in stock prices for different groups of shares may be illustrated with the various Standard Statistics averages. Thus, using the list of 50 industrial stocks, the monthly average for Jan-

uary, 1936 was 129.1. Substantial gains brought the average to 136.6 in February, and 140.7 in March, but only a small gain was evident in April. After dropping from 141.5 in the latter month to 133.9 in May, the average rose uninterruptedly over the balance of the year. The average was 138.8 for June, 146.0 for July, 149 for August, 151.1 for September, 159.8 for October, and 166.2 for November (the latest available). The November average of 166.2 compares with yearly averages of 100.9 for 1935, 89.7 for 1934, 75.8 for 1933, 53.5 for 1932, 104.7 for 1931, 163.6 for 1930, and 212.6 for 1929. During 1929, it should be noted, this industrial list reached the highest monthly level in September, namely, 245.9. Comparing this 1929 September average with 37.9, the lowest monthly average reached in June, 1932, it appears that these industrial shares declined within the three years under consideration by nearly 85 per cent. The November, 1936 average of 166.2 compared with the June, 1932 average of 37.9 shows an appreciation of about 339 per cent. At the same time, however, it should again be borne in mind that the November, 1936 average, compared with the September, 1929 average still shows a depreciation of more than 32 per cent.

Rails.—Railroad stocks showed about the same percentage gain experienced by the industrials, although in dollars the rise was much less. Using the Standard Statistics average of 20 railroads, the average for January, 1936 was 47. After an increase to 52.3 in February it declined in March to 51.3, in April to 50.6, and in May to 47.7. Prices then rose each month until November, at which time the railroads failed to follow the industrials which evidenced substantial gains at that time. The average for June was 50.2, for July 54.6, for August 57, for September 58.6, for October 62.2 and for November 60.8, the latest monthly average available at the time of writing. The

November average of 60.8 compares with a corresponding average of 47 for January of the year, and with yearly averages of 36 for 1935, 42.9 for 1934, 39 for 1933, 26.8 for 1932, 72.5 for 1931, 121.7 for 1930, and 141 for 1929. During 1929 it should be noted that these railroad shares reached the highest monthly level during September, namely, 161.2. Comparing this September, 1929 average with 15, the lowest average reached in June, 1932, it appears, as was explained last year, that these railroad shares declined within the three years under consideration by over 90 per cent. The November, 1936 average of 60.8, compared with the June, 1932 average of 15, shows an appreciation of 305 per cent. Yet this November, 1936 average, compared with 161.2, the September, 1929 high still shows a depreciation of over 62 per cent.

Utilities.—A smaller degree of appreciation is shown in the utility group. According to the Standard Statistics average of 20 utilities, the monthly average for January, 1936 stood at 88.4 and for November at 96.6, slightly below the October figure of 98.9. The monthly averages showed little variation except in May, when they reacted from the April figure of 88.6 to 83.9 and in June and July, when the average improved to 90.3 and 97.8 respectively. The November average of 96.6 compares with yearly averages of 62.8 for 1935, 65.5 for 1934, 81.8 for 1933, 85.7 for 1932, 154.2 for 1931, 220.8 for 1930, and 246 for 1929. During 1929 it should be noted that the utilities reached the highest monthly level during September, namely, 340.6. Comparing this September, 1929 high with the March, 1935 low of 42.9, it appears that these shares declined within the six years under consideration by over 87 per cent. The November, 1936 average of 96.6, compared with the March, 1935 average of 42.9, shows an appreciation of 125 per cent. Yet this November, 1936 average compared with 340.6, the September, 1929 high, still shows a depreciation of over 71 per cent.

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SECURITY MARKET PRICES

	Railroads (20 stocks)		Industrials (50 stocks)		Public Utilities (20 stocks)	
	1935	1936	1935	1936	1935	1936
January.....	36.5	47.0	88.4	129.1	49.3	88.4
February.....	33.9	52.3	86.9	136.6	45.0	91.1
March.....	29.9	51.3	81.6	140.7	42.9	90.1
April.....	31.5	50.6	86.4	141.5	51.5	88.6
May.....	33.0	47.7	93.7	133.9	54.8	83.9
June.....	34.6	50.2	96.0	138.8	60.8	90.3
July.....	35.9	54.6	101.0	146.0	64.7	97.8
August.....	37.9	57.0	106.7	149.0	74.2	98.5
September.....	38.7	58.6	109.7	151.1	72.8	97.3
October.....	36.5	62.2	113.5	159.8	74.2	98.9
November.....	40.4	60.8	123.8	166.2	82.3	96.6
December.....	43.3	....	123.3	.....	81.5	....

(Source of Data—"Standard Trace and Securities," *Statistical Bulletin*, Standard Statistic Company, Inc.)

THE BOND MARKET

Bond sales on the New York Stock Exchange during 1936 totalled \$3,575,-453,110 (*The New York Times* report) as compared with \$3,347,855,300 for 1935, \$3,729,460,500 for 1934, \$3,-366,402,950 for 1933, \$2,971,965,650 for 1932, \$3,075,347,100 for 1931, \$2,779,-009,350 for 1930, and \$3,020,316,700 for 1929.

Just as in the share market, bonds experienced a marked increase in prices. Using the Standard Statistics average of 60 bonds, the monthly average for 1936 rose from 95.3 in January to 99.8 in November. The low price for the year of 93.3 was registered on Jan. 2, while the high of 100.2 was frequently reached in December. Prices rose consistently with the exception of some recession in April and May. Thus, the January average of 95.3 rose to 97.2 in February, declined to 96.6, 95.9, 95.5 in March, April and May respectively and increased to 96.2 in June, 97.1 in July, 97.7 in August, 98.6 in September, 99.6 in October, and 99.8 in November. The November average of 99.8 (the latest available) compares with the low monthly averages for the depression of 60.6 (June, 1932) and the highest monthly average during the depression of 101.6 for September, 1930.

COMPOSITE BONDS (60 bonds)

	1935		1936	
	High	Low	High	Low
January.....	88.4	86.6	96.4	93.3
February.....	88.2	86.3	97.9	96.3
March.....	86.8	83.0	97.4	95.8
April.....	87.0	83.4	96.5	94.5
May.....	87.4	86.6	95.9	94.7
June.....	89.6	86.8	96.6	95.7
July.....	89.8	88.8	97.7	96.4
August.....	90.4	89.4	97.9	97.4
September.....	90.9	89.6	99.2	97.9
October.....	90.5	89.3	100.0	99.1
November.....	91.9	90.3	100.1	99.2
December.....	93.1	91.8	.....	....

THE MONEY MARKET

With respect to both time and call loan rates, the 1936 tendency continued much as it was during 1935, 1934, and 1933, and is indicative of a continuing plethora of idle funds. Just as was explained in last year's account, New York time and call loans were often quoted at a fraction of one per cent, thus showing the unusual absence of demand for funds for commercial and speculative purposes.

Beginning with a January average of $\frac{3}{4}$ of 1 per cent for both prime commercial paper and for call loans in New York, the average monthly rates during 1936 remained extremely low, month after month, throughout

THE SECURITY AND MONEY MARKETS

the year. All during the year the rate on prime commercial paper in New York remained at a monthly average of $\frac{3}{4}$ of 1 per cent. For call loans in New York the monthly average remained at $\frac{3}{4}$ of 1 per cent through April, rose to .919 per cent in May, and stood at 1 per cent during June and the balance of the year.

According to the *New York Stock Exchange Bulletin* (December, 1936) the borrowings of New York Stock Exchange members on security collateral have shown only a slight increase, as compared with 1935, despite the existence of an almost uninterrupted rise in the stock market during the year. Thus time loans actually decreased from \$391,183,500 to \$275,827,415 between Jan. 1 and Dec. 1, 1936. During the same period, however, call loans increased from \$547,258,152 to \$708,177,287. Combining the two types of loans, total borrowings showed an increase of from \$938,441,652 on Jan. 1, to \$984,004,702 on Dec. 1. This combined total compares with corresponding figures, prevailing on Dec. 1, of \$846,113,137 for 1935, \$831,000,000 for 1934, \$789,000,000 for 1933, \$338,000,000 for 1932, \$730,000,000 for 1931, \$2,162,000,000 for 1930, \$4,017,-

000,000 for 1929, and \$6,392,000,000 for 1928. No doubt, owing to the Securities and Exchange Act, many purchasers of stocks have done their financing directly through the banks, instead of with brokers as formerly. Yet the status of brokers' loans remains perplexing in view of the extraordinarily low interest rates prevailing throughout the year, and the further substantial rise which has occurred in the price level of stocks. As stated in the *New York Stock Exchange Bulletin*: "Throughout the course of the advance in values during the 1926-1929 period, brokers' loans fluctuated regularly in correspondence with the changes in value. That has not been true this time. The value of listed shares has now risen to levels similar to those that prevailed in the latter part of 1928, but brokers' loans are less than one-sixth of what they were then. Moreover there has been no net increase in these loans since the middle of 1934, despite the fact that the value of shares listed on the Exchange has doubled. This is eminently a cash market, and as such is relatively devoid of that major characteristic of speculative inflation, the use of borrowed money."

MONEY RATES

(Source of Interest Rate Data—Standard Statistics)
(Source of Average Bank Rate—Babson's Statistical Service)
(Source of Gold Movements—Standard Statistics)

	Commercial Paper 4-6 months (choice)		Call Loans—N. Y. Stock Exchange Renewals—average of daily renewal rates		Average Bank Rates—England, France and Germany		Gold Movements *(Exports Exceed Imports) (000,000 omitted)	
	1935	1936	1935	1936	1935	1936	1935	1936
January.....	1.00	0.75	1.00	0.75	2 5/8	3 1/3	149.4	45.6
February.....	1.00	0.75	1.00	0.75	2 5/8	3 1/8	122.8	* 16.6
March.....	1.00	0.75	1.00	0.75	2 5/8	3 1/8	13.0	5.5
April.....	1.00	0.75	0.64	0.75	2 5/8	3 2/3	148.6	28.1
May.....	1.00	0.75	0.25	0.92	4	4	140.0	169.9
June.....	1.00	0.75	0.25	1.00	3 7/8	3 7/8	230.4	277.8
July.....	1.00	0.75	0.25	1.00	3 1/4	3	16.2	15.4
August.....	0.86	0.75	0.25	1.00	3	3	46.1	67.5
September....	0.75	0.75	0.25	1.00	3	3 1/6	156.7	171.8
October.....	0.75	0.75	0.29	1.00	3	2 3/4	315.3	218.8
November....	0.75	0.75	0.75	1.00	3 1/2	2 2/3	210.6	.....
December....	0.75	.....	0.75	.....	3 1/3	2 2/3	190.0	.....

X. BUSINESS AND FINANCE

BANKING AFFAIRS

By GURDEN EDWARDS

SECRETARY, ECONOMIC POLICY COMMISSION, AMERICAN BANKERS ASSOCIATION

GENERAL

Banks of all classifications in the United States on June 30, 1936, numbered 15,752 institutions with aggregate deposits, exclusive of inter-bank deposits, of \$51,335,000,000. The total investments of these institutions were \$27,779,000,000 on the date given and their loans were \$20,679,000,000. As to numbers, these figures showed a small decrease from a year earlier, as there were on June 30, 1935, 15,994 banks, including both national and state chartered institutions, but there was a considerable increase in the item of deposits. At the earlier date, total deposits were \$45,766,000,000, so that the year indicated showed an increase of \$5,569,000,000 in this item. In the same period, total investments of banks increased by \$3,634,000,000, but their loans by only \$407,000,000. This latter circumstance, while in reversal of the substantial loss shown in loans the previous year, still reflected the continued difficulty experienced by bankers in finding qualified commercial and industrial borrowers willing to venture on large expansion of their activities, even though general confidence in business had been widely reestablished. The fact also remained that the Government had entered largely into the field of extending credit to private interests and a large part of bank earning assets were found in the form of purchases of Government bonds by which Government lending was financed. Another factor still retarding the expansion of bank loans was the circumstance that a great many large corporations were so amply provided with cash resources of their own as to render them largely independent of bank borrowings.

CLASSIFICATIONS OF BANKS

Official reports on banks by classes showed that there were on June 30, 1936, 5,368 national banks as com-

pared with 5,425 banks of this class a year earlier. The national banks had deposits of \$21,986,000,000, exclusive of inter-bank deposits, as compared with \$19,031,000,000 a year earlier. Their investments had risen in the year indicated from \$10,698,000,000 to \$12,459,000,000, and their loans from \$7,353,000,000 to \$7,748,500,000. The same reports showed that there were in June, 1936, 10,384 state banks as compared with 10,569 a year earlier; this figure comprised state commercial banks, trust companies, mutual and stock savings banks and such private and industrial banks as are included in abstracts issued by state banking departments. The deposits of this group of banks totalled in June, 1936, \$29,350,000,000 as compared with \$26,735,000,000 a year earlier. Their investments at the 1936 date was \$15,320,000,000 as compared with \$13,446,000,000 a year earlier and their loans were \$12,931,000,000 as compared with \$12,919,000,000 a year earlier.

BANK SUSPENSIONS

The 11 months of 1936 from January through November witnessed only 39 suspensions of licensed banks with total deposits of \$9,967,000. This compares with 29 suspensions for the same period in 1935 with deposits of \$9,537,000. Of the 1936 suspensions, 36 were insured by the Federal Deposit Insurance Corporation with deposits of \$9,375,000; three were not insured, with deposits of \$592,000.

LIMITATION OF BANK CHARTERING

The American Bankers Association, discussing public questions in its resolutions at its annual convention held in San Francisco in September, 1936, adopted the following declarations: "We reiterate our stand, expressed in the resolutions adopted at our last annual convention, that the chartering of new banks be limited rigidly to

the economic needs of the nation. With the reduction of the number of banking institutions in the country to something less than 16,000 units, the correction of over-banking is making sound and orderly progress. The strength of the banks is attested by the fact that they have repaid to the Reconstruction Finance Corporation eighty-eight per cent of the funds they borrowed from it during the banking emergency and a substantial proportion of banking capital owned by the Reconstruction Finance Corporation has been retired. The Government's total investment in the banks now constitutes less than 15 per cent of their capital structure. American banking is now well able to finance by credit extensions any expansion of sound business enterprise that may accompany business recovery.

"Public opinion must be aroused to prevent the over-production of banks through the indiscriminate chartering of new institutions in places which are either not large enough to support a bank or in which there are already available sufficient banking facilities. We view with concern reports which have reached us of a tendency in some localities to establish new banks which are not required and to bring political pressure to bear upon supervisory authorities when they have resisted unjustified expansion of banking facilities in their jurisdictions. We recommend that support be given the supervisory authorities under such conditions."

BANKING LEGISLATION

As to legislation affecting banking the resolutions stated: "We believe that the Banking Act of 1935 and the regulations issued under it should be submitted to further practical test by experience before being changed by important amendments. The Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Comptroller of the Currency, as well as this and other business associations, are conducting extensive researches into the sufficiency of its provisions. We believe that these researches when completed and studied

carefully by the Government agencies and practical bankers will indicate whether major changes in the banking laws will appear desirable."

POSTAL SAVINGS AND GOVERNMENT LENDING AGENCIES

As to Government competition, the resolutions said: "We approve the researches conducted by the Association's Committee on Banking Studies with respect to the Postal Savings System and Government lending agencies. We particularly commend the steps taken to establish the facts. Assurances have been received from Government officials that they are desirous of discontinuing certain of these agencies as soon as adequate service can be rendered by the banks. We entertain the hope that when the facts have been fully ascertained it will be possible to suggest legislation which will be in the public interest and which will moderate competition between the Government agencies and the chartered banks."

CHANGED BANKING CONDITIONS

Changing bank conditions were discussed as follows: "Certain economic changes in the nation's business practices have reduced the volume of commercial loans required to finance current operations. These changes, coupled with constantly lower yields on investments, have had an unfavorable effect upon the earnings of many banks. It is axiomatic that sound banks cannot continue to be sound without adequate earnings. We urge that all banks devote special attention to the problems of improving their portfolios of investments, of canvassing the possibilities of developing new forms of credit extension, and of adjusting interest payments in conformity with the changed conditions. We also urge that all banks which have not already done so establish fair and just schedules of compensation for the actual services they render."

RECONSTRUCTION FINANCE CORPORATION AND BANKING

The Reconstruction Finance Corporation, in reporting on its opera-

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tions to Nov. 30, 1936, stated that since its inception in January, 1932, it had authorized loans to 7,481 banks and trust companies of all classes in the aggregate amount of \$2,480,000,000, of which amount \$447,154,000 was withdrawn or cancelled and \$62,516,000 remained unavailed of, leaving \$1,971,000,000 actually disbursed. Of this latter amount, \$1,761,000,000, or 89%, had been repaid by the banks. The Corporation also reported that since it was empowered in March 1933, to make purchases of preferred stock, capital notes and debentures of banks to strengthen their capital structures, authorizations had been made for such purchases in the amount of \$1,296,000,000. It was also stated that loans had been authorized for distribution to depositors in 2,705 closed banks, aggregating \$1,248,000,000, of which \$919,400,000 had been actually disbursed and, of this, \$812,000,000 had been repaid. The foregoing figures consistently dem-

onstrated the steady return of normal conditions in the banking structure.

FEDERAL DEPOSIT INSURANCE CORPORATION

The Federal Deposit Insurance Corporation reported that on June 30, 1936 the Corporation was insuring the deposits up to \$5,000 in a single account of 14,059 banks with total deposits of \$46,625,000,000. It is estimated that about 99% of the accounts were fully covered by the \$5,000 limit. Only about 1,000 commercial banks are not members in the Federal Deposit Insurance Corporation.

DETAILED RESOURCES AND LIABILITIES OF INSURED BANKS, JUNE 30, 1936

The latest available comprehensive official figures for all classes of banks, giving detailed schedules of assets and liabilities, are those presented in the report of the Federal Deposit Insurance Corporation for June 30, 1936, and are as follows:

CONDITION OF INSURED COMMERCIAL BANKS IN UNITED STATES AND POSSESSIONS, JUNE 30, 1936.

(Amounts in thousands of dollars)

	All banks	National banks members Federal Reserve System	State banks members Federal Reserve System	Banks not members Federal Reserve System
Number of banks.....	14,059	5,368	1,032	7,659
Assets				
Loans, discounts, and overdrafts (including rediscounts).....	\$15,107,185	\$7,748,496	\$4,793,349	\$2,565,340
United States Government obligations, direct and fully guaranteed.....	14,772,477	8,435,026	5,236,906	1,100,545
Other bonds, stocks and securities.....	7,411,609	4,024,111	2,020,922	1,366,576
Total loans and securities	\$37,291,271	\$20,207,633	\$12,051,177	\$5,032,461
Customers' liability on account of acceptances.....	159,267	81,373	75,581	2,313
Banking house, furniture, fixtures.....	1,194,621	639,838	355,083	199,700
Other real estate owned.....	574,024	184,015	195,442	194,567
Reserve with Federal Reserve Banks.....	5,607,119	3,520,901	2,086,218	.....
Coin and currency.....	915,988	528,433	184,988	202,567
Balances with other banks...	5,321,897	3,083,233	911,977	1,326,687
Cash items in process collection.....	2,194,114	1,235,699	911,794	46,621
Securities borrowed.....	1,000	388	167	445
Other assets.....	319,091	167,128	112,919	39,044
Total assets.....	\$53,578,392	\$29,648,641	\$16,885,346	\$7,044,405

BANKING AFFAIRS

Liabilities				
Demand deposits of individuals, partnerships, or corporations.....	\$21,463,913	\$11,650,881	\$7,671,117	\$2,141,915
Time deposits of individuals, partnerships or corporations	13,005,697	7,051,373	3,047,822	2,906,502
Public funds of States and political subdivisions.....	3,314,263	2,103,803	594,648	615,812
U. S. Government and postal savings deposits.....	1,301,726	827,000	361,809	112,917
Deposits of other banks; cash letters of credit; certified, officers', and travellers' checks outstanding.....	7,540,150	4,519,744	2,877,367	143,039
Total deposits.....	\$46,625,749	\$26,152,801	\$14,552,763	\$5,920,185
Mortgage bonds and participation certificates outstanding.....	27,578	.....	20,777	6,801
Bills payable, rediscounts, and other liabilities for borrowed money.....	38,558	3,720	16,132	18,706
Securities borrowed.....	1,000	388	167	445
Acceptances outstanding executed by or for the account of reporting banks.....	180,299	95,637	82,584	2,078
Dividends declared but not yet payable.....	45,682	28,043	15,956	1,683
Other liabilities.....	360,938	208,800	120,852	31,286
Total liabilities excluding capital account.....	\$47,279,804	\$26,489,389	\$14,809,231	\$5,981,184
Capital stock and capital notes and debentures.....	3,212,615	1,687,600	879,597	645,418
Surplus.....	2,042,072	971,472	835,044	235,556
Undivided profits—net.....	628,478	345,963	174,320	108,195
Reserve for contingencies and undeclared dividends.....	401,455	146,515	184,795	70,145
Retirement fund for preferred stock or capital notes and debentures.....	13,968	7,702	2,359	3,907
Total liabilities, including capital account.....	\$53,578,392	\$29,648,641	\$16,885,346	\$7,044,405

SAVINGS IN AMERICAN BANKS

Savings, including time deposits and postal savings, deposited in banks in the United States, increased 3.8 per cent in the year ended June 30, 1936, according to reports received by the Savings Division, American Bankers Association. The increase amounted to nearly \$850,000,000 and the number of savers grew by 1,081,506. The gain in deposits was general throughout the United States and in only four States was a loss shown. Total savings in banks aggregated \$23,464,000,000. The gains were accepted as proof of stabilized banking conditions which continued to call money from unaccustomed places. The number of depositors was found to be 42,396,712. The following tabulation gives the savings picture during five years:

SUMMARY OF SAVINGS DEPOSITS AND DEPOSITORS

(including time certificates and postal savings)

(000 omitted)

Year	Total Savings Deposits	Per Inhab. Savings Dep.	Total Number Savings Depositors
1932....	\$24,281,346	\$194	44,352,106
1933....	21,125,534	168	39,262,442
1934....	21,752,510	172	39,562,174
1935....	22,652,489	179	41,315,206
1936....	23,463,585	184	42,396,712

THE AMERICAN BANKERS ASSOCIATION

The American Bankers Association, the national organization of banking, including in its membership the great majority of the 16,000 state commercial and national trust companies and

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savings banks, held its 62nd annual convention at San Francisco in September, 1936. Among the plans announced for banking betterment by Tom K. Smith, president of The Boatmen's National Bank, St. Louis, who was elected president of the Association, was the prosecution of wide research in all classes of banking problems and activities and of the operations of Federal Government lending agencies; also the continuation of the holding of regional conferences for bankers on problems of administration in various sections of the United States.

Boston was designated for the hold-

ing of the 1937 convention Oct. 11-14. The general officers of the Association elected for 1936-37 were: President, Tom K. Smith, president of The Boatmen's National Bank, St. Louis; first vice president, Orval W. Adams, executive vice president of the Utah State National Bank, Salt Lake City; second vice president, Philip A. Benson, president of the Dime Savings Bank of Brooklyn, New York; treasurer, Arthur B. Taylor, president of the Lorain County Savings & Trust Company, Elyria, Ohio; executive manager, F. N. Shepherd, American Bankers Association, New York City.

TRUST BUSINESS

By GILBERT T. STEPHENSON

DIRECTOR OF TRUST RESEARCH, GRADUATE SCHOOL OF BANKING, NEW YORK

The three outstanding developments of the year in the trust field have been (1) the passage of the common trust fund section of the Federal Revenue Act of 1936; (2) the beginnings of the scientific analysis of the costs of trust service; and (3) the establishment of a department of trust research.

THE COMMON TRUST FUND MOVEMENT

In order to realize the full significance of the passage of the common trust fund section of the Federal Revenue Act of 1936, one must have in mind something of the common trust fund movement itself. The common trust fund movement, in turn, is interrelated with the administration of small trust accounts.

It has been found that, taking the country as a whole, a vast majority of the trusts being administered by the trust departments of banks and trust companies are small trusts. It has been estimated that fully two-thirds of these accounts are less than \$25,000. Many of them are less than \$10,000, and not a few of them are even less than \$1,000.

The main problem of the small trust account is one of investment. Today, diversification, so as to dis-

tribute the risk and to stabilize both principal and income, is one of the universally accepted principles of trust investment. Yet in a small trust account it is simply impossible to obtain satisfactory diversification of investments. A group of 29 representative trust investment officers, asked to state the minimum amount with which they could obtain satisfactory diversification, gave answers that ranged all the way from \$10,000 to \$100,000 and averaged about \$37,000. If these estimates—even the lowest ones—are substantially correct, then diversification is a practical impossibility in small trust accounts independently invested.

Yet, if trust institutions are to meet the needs and demands of the American people generally, they must accept and administer small trusts as well as large ones. A person with an estate of only \$10,000 may need trust service for himself or for his wife or children or for other dependents fully as much as the person with an estate of \$500,000.

The trust institutions of the United States have come definitely to the conclusion that the best and, perhaps, the only practicable way of obtaining satisfactory diversification for

TRUST BUSINESS

small trust accounts is by combining for investment purposes the funds of many small accounts and thereby creating a common fund ample to permit wide diversification. This conclusion has been sustained by the experience of other countries as well as our own. Since 1870 Denmark has had a successfully operated common trust fund. Since 1872 New Zealand has had one. For a shorter time several States of the Australian Commonwealth have had common trust funds. Furthermore, a few American trust institutions scattered here and there over the country—in Boston, New York, Wilmington (Delaware), Minneapolis, and St. Louis—on their own initiative several years ago began to experiment with combining for investment purposes the funds of small accounts. The results have been gratifying even throughout the depression period.

Scarcely had the common trust fund movement got under way when the courts held that under the Federal Revenue Act as then worded a common trust was taxable as an association for income tax purposes. This meant that the incomes of funds invested through a common trust fund were, in effect, subject to two income taxes—first the tax levied on the income of the common fund itself and, second, the tax levied on the income of each participating trust after the trust had received its share of the distributed or distributable income.

This ruling of the court threatened the very existence of common trust funds as then constituted. It resulted in the levying of a double Federal income tax on the very trusts that were the least able to stand even a single tax. It meant, in effect, that if it was allowed to stand, many of the American people who most needed trust service might be deprived of it entirely.

COMMON TRUST FUND SECTION OF THE FEDERAL REVENUE ACT

This dilemma was called to the attention of Congress by the American Bankers Association; and Congress readily passed what is known now as

the common trust fund section (Section 169) of the Federal Revenue Act of 1936. This section provides, in substance, that a fund maintained by a bank or trust company (1) exclusively for the collective investment and reinvestment of moneys contributed thereto by the bank or trust company in its capacity as trustee, executor, administrator, or guardian and (2) in conformity with the rules and regulations, prevailing from time to time, of the Board of Governors of the Federal Reserve System pertaining to the collective investment of trust funds by national banks, shall not be subject to taxation as an association. This leaves the income of each participating trust to be taxed as if its funds were independently invested, which is as it should be. Thus the effect of the common trust fund section is not to relieve any trust of its share of the income taxes, but to relieve trusts participating in the common trust fund of double taxation.

It remains now only for the rules and regulations of the Board of Governors of the Federal Reserve System to be promulgated. Then the trust institutions of the United States should be able to offer trust services to people of small estates comparable in its profitableness to the beneficiaries and inexpensiveness to the creators as they offer to people of larger estate.

SCIENTIFIC COST ANALYSIS

In the United States, trust business has developed largely as an adjunct of banking. Its development as an independent, self-sustaining enterprise has been slow and hesitant. Many banks have established trust departments primarily, it would appear, to provide trust service for their bank customers or to meet the competition of other banks that had trust departments. They reasoned that the operation of a trust department would keep their bank customers from moving their bank business to other banks that had trust departments or that it would bring customers from other banks that did not have trust departments. They figured that the increase in profits of the bank would

more than make up for the losses thus sustained in the trust department.

It is surprising then that in many banks the profitableness of the trust department was a matter of only secondary concern. This, which amounted almost to indifference with respect to trust earnings, was accentuated by the fact that in a trust department there is and always must be a waiting period for earnings between the making and the execution of the will. Realizing that there must be a waiting period when the banking department had to carry a part of the overhead expenses of the trust department, too many banks came to regard the waiting period as permanent and to carry the trust department as a matter of course as a service department.

So long as bankers were in this state of mind about trust business, it is no wonder that they charged up the expense of the trust department as a general expense, that they expected and required their trust departments to render free or grossly underpaid services to their bank customers, or that they were slow in setting up cost accounting systems that would allocate earnings and expenses and reflect the true position of the trust department with respect to earnings.

The post-depression difficulty of banks in making profits on their banking operations—the slack demand for credit with the consequent low interest rates—has made them turn their attention to the earnings of their trust departments. In the first place, they turned to see if their trust departments could help them out in earnings; and, in the second place, to see if their trust department was not costing them more than it was worth. When they so turned their attention, they found—some of them to their utter surprise—that they did not have a cost accounting system that would give them the information they desired. A few of them had cost accounting systems that revealed to them whether their trust department as a whole was making or losing money. But almost none

of them had a system that would tell them whether they were making or losing money on a particular trust account or on a particular class of trust accounts.

About the time that the banks began to look into and to become concerned and, in some instances, alarmed over the earnings and costs of their trust departments, a few banks and trust companies began actually to do something about it. They had their trust department cost-analyzed on a scientific basis. They faced the facts. In some instances they were surprised at the results. One firm of cost-analysts reported and gave wide publicity to the fact that, of the first 300 trust departments they cost-analyzed, they found only one in 12 showing a profit and of those showing any profit only one in three showing anything more than a nominal profit. Despite every effort to explain away or to tone down these figures, the fact remains that far too large a percentage of the trust institutions of the country are either just breaking even or operating at a loss.

At this point—which brings us to February, 1936—the Trust Division of the American Bankers Association took cognizance of the earnings situation of the trust departments of the country. It named a Committee on Trust Policies. This Committee, with the approval of the Trust Division, accepted as its one and only assignment for the time being that of finding a way of putting trust business on a paying basis. One of the first things that the committee did was to recommend to banks and trust companies generally that they have their trust department cost-analyzed so as to find out for themselves whether their own trust department was on a paying or losing basis or was breaking even.

As a result of this concern about trust earnings, trust institutions for the first time are giving attention to the scientific cost-analysis of trust services. In some cases professional cost-analysts are doing the work. In others, institutions are doing their own cost-analyzing. However it is accom-

lished, trust institutions now for the first time are finding out the facts about the costs and earnings of their trust department. All of this will result advantageously to the customers of trust departments in that it will improve the trust service and base the compensation on the cost of the service rendered.

THE TRUST RESEARCH DEPARTMENT

Every kind of business must have its pioneers, its explorers, its delvers into the unknown, its prospectors out on the frontiers of knowledge. Hence the research laboratories, the experimental stations, the testing grounds, the clinics, the exploring expeditions.

Trust business is not an exception to the rule. It, too, must have its researchers. But until now what research has been done has been voluntary and largely incidental to other employment. A trust man with a studious bent would explore some section of the trust field and publish his findings in a book or an article or make an address on the subject. A committee of the Trust Division would investigate and report upon a special subject assigned to it. A graduate student in the field of banking or finance would write his doctor's thesis on some branch of trust business or trust service. In these ways, over the years, a vast amount of highly valuable material has been assembled. But, for the

most part, these researches have been independent, unrelated and consequently have left great sections of the trust field wholly unexplored.

Now for the first time an effort is to be made to organize and systematize trust research. The Graduate School of Banking, which is under the auspices of the American Bankers Association, established during 1936 a trust research department with a director in charge. This department will attempt, first, to make use of the research work that has been done already; second, to conduct research of a practical nature; third, to encourage and direct students majoring in trust business in the Graduate School of Banking to carry on thorough and scientific researches of their own in assigned sections of the trust field. Thus the trust research department and the students majoring in trust business in the Graduate School of Banking should constitute a force of researchers, explorers, pioneers who will give to trust business and trust service benefits that may be comparable to these emanating from the laboratories and experimental stations of the great industrial corporations and the laboratories, clinics, and explorations of the great sciences. In other words, trust business, in this forward movement, is at last in step with all the other leading industries and sciences.

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FOREIGN EXCHANGE

By MARCUS NADLER

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GENERAL

The foreign exchange market during the year 1936 was marked by the abandonment of the gold standard by the former gold bloc countries, the agreement reached between the United States, France and Great Britain as to a mutual cooperation of their respective stabilization funds, the continued influx of gold into the United States and by more definite signs of returning stability in the foreign exchanges of most of the world.

ABANDONMENT OF GOLD BY FRANCE

The most important event, of course, was the abandonment of the gold standard by the former gold bloc countries. Although substantially large groups in France, Holland and Switzerland had for some time advocated a realignment of their currencies, the respective governing parties generally opposed such measures. During the summer of 1936, however, with labor difficulties, wage increases, and the curtailment of hours of work, together with an extremely delicate political situation carrying fears of war, a flight of capital from France took place on a large scale. From the end of December, 1935 to Sept. 25, 1936 the Bank of France lost over \$1,000,000,000 in gold. When it was found impossible to stem the huge outflow through orthodox measures, such as raising the discount rate, the Front Populaire government decided to abandon the gold standard.

On Sept. 26, through effective action by the Bank of France in restricting exports of gold, France, for all practical purposes left the gold standard. On Oct. 1, final legislation was passed. Its most important provisions were as follows: 1. The gold content of the franc was to be fixed at a figure not less than 43 nor more than 59 milligrams of gold, 0.90 fine, instead of the previous figure of 65.5 milligrams; 2. An Exchange Equal-

ization Fund of 10,000,000 francs was established, to control the external value of the franc within the above limits to be operated by the Bank of France for the account of the Treasury; 3. Hoarded, or privately held, gold was to be sold to the Bank of France at the old price or the increment in value was to be taxes, except if held in amount less than 200 grams; 4. Special measures also provided for a lowering of the tariff, in some cases to as much as 20 per cent.

SWITZERLAND AND HOLLAND

Similar action was taken by the Swiss Government which passed a law providing for a devaluation of the Swiss franc of from 26 to 34 per cent. Holland, on the other hand, merely abandoned the gold standard to let the guilder find its own level. It did not fix any definite point at which the guilder was to be ultimately stabilized. The reason for this action was explained by the position in which Holland found herself. Of the gold bloc countries, the national economy of Holland had been better adjusted to the then existing parity than was the case in either France or Switzerland. Prices of commodities had been reduced, costs of production had been lowered, and confidence in the government remained high. But with the abandonment of the gold standard by the two latter countries, Holland was no longer in a position to maintain the old parity without undue hardship. Consequently, she decided to abandon the gold standard, and let her currency drift to seek a new equilibrium level. Since this act took place, the Dutch guilder has declined by more than 20 per cent or to 54.44 cents per guilder, at which point it was currently quoted (Dec. 4, 1936) in New York. From the beginning, it was evident that currency devaluation in Holland would not go as far as in either France or Switzerland. In all probability, the Dutch guilder

will ultimately be stabilized at about 25 per cent below its old parity.

DEVALUATION IN ITALY AND OTHER COUNTRIES

Following the action taken by the gold bloc, a number of other European countries announced devaluation measures. Italy reduced the official gold content of the lira by 40.9 per cent, approximately to its old 1927 relationship to both the pound and the dollar. The devaluation was made exactly equivalent to the devaluation of the dollar and powers similar to those held by the President of the United States to vary the gold content of the dollar, were also granted. In Latvia, the government announced the pegging of the lat to the British pound sterling at the ratio prevailing prior to the pound's depreciation; the rate is to be 25.22 lats to the pound rather than 15.50 lats. In Greece a decision was made to fix the value of the drachma within the limits of 540 and 550 drachmas to the pound. In Czechoslovakia, on Oct. 8, a law was passed empowering a devaluation of the crown at from 13.29 to 18.68 per cent. In Germany, up to the middle of November, the government had decided to take no measures towards devaluation but to maintain instead the rigid system of exchange restrictions.

THE TRIPARTITE STABILIZATION AGREEMENT

The abandonment of the gold standard by the various gold bloc countries placed the United States in a rather peculiar position because, under the then existing regulations, gold could be exported only to those countries which had remained on the gold standard and only at times when the dollar was selling below the gold export point. With the former gold bloc off gold, it meant that under the existing regulations no gold could be exported from the United States in order to support the dollar if a repatriation of foreign capital occurred and our currency declined in the exchange markets of the world. To remedy this, as well as to instill

confidence in the new realignment of the currencies of Great Britain, France and the United States, an agreement was reached between these countries whereby the respective stabilization funds agreed mutually to support their currencies and sell gold to one another if this should prove necessary.

Under the present arrangement, for example, if a repatriation of capital from the United States should set in, thereby causing a decline in the dollar in the London or Paris markets, the Equalisation Account of Great Britain or the Stabilization Fund of France would buy dollars, thereby preventing a continued fall in its value. The Stabilization Funds abroad, then, could sell the dollars to the American Stabilization Fund and receive dollars in return. This agreement though is subject to cancellation at practically a moment's notice. As long as it lasts, however, it means a *de facto* stabilization of the three principal currencies of the world on a somewhat more or less definite international gold basis though of course it is by no means a return to the old gold standard.

The devaluation by the gold bloc countries has removed one of the chief obstacles to a more permanent return to a modified form of the old international gold standard. It should not be expected, however, that a definite return will take place in the very near future. The economic and political conditions existing in Europe at the present time are not conducive to permanent currency stabilization.

IMPORTS OF GOLD INTO THE UNITED STATES

During the 9 months ended September, 1936, the United States imported \$764,966,000 of gold. Since Jan. 31, 1934, when the gold reserve act was passed, the importation of gold into the United States has amounted to \$3,631,294,000. Among the several factors which contributed to this huge inflow were: (1) the desire to participate in the rise of the American stock market which was perhaps the most important cause for the

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huge influx of foreign capital to this country. Europeans, in general, having more confidence in the future of the United States than many Americans and certainly more confidence in the future of the United States than in that of their own countries, shifted considerable portions of their assets to the United States and bought American securities. (2) The fear of devaluation in the gold bloc countries. For quite some time it became evident that the gold bloc countries could not, without undergoing continued and unnecessary deflation, maintain their old parities. Hence, many nationals of France, Holland and Switzerland shifted part of their assets to the United States in order to avoid losses and to profit by eventual developments. (3) The abnormal external political situation in Europe and the fear of war which is still bringing an influx of foreign capital to the United States.

The figures on gold imports into the United States (January-September, 1936) together with the more important countries of origin may be seen in the following table:

From: United Kingdom.....	\$ 24,276,000
France.....	478,629,000
Netherlands.....	45,261,000
Canada.....	45,057,000
Mexico.....	38,606,000
British India.....	55,820,000
Other countries.....	77,317,000
Total.....	\$764,966,000

THE STERLING BLOC

The currencies which are pegged to sterling maintained a high degree of stability in relationship to the pound. The pound sterling itself fluctuated little in relation to the United States dollar as may be seen in the table below. The high-low difference in the nine months from January through September was only 9.3 cents.

(in cents)	
January.....	496.3
February.....	500.0
March.....	497.1
April.....	494.3
May.....	496.9
June.....	501.9
July.....	502.2
August.....	502.5
September...	503.6

The stability of the pound in relationship to the dollar was appar-

ently maintained largely with the aid of the Equalisation Account which in all probability was forced to absorb considerable amounts of gold. The net imports of gold into the United Kingdom during the first nine months of 1936 amounted to \$977,740,000. Since the monetary stock of gold of the Bank of England increased by only \$404,948,000, then \$572,792,000 of gold was absorbed either by the Equalisation Account or hoarded in England for private account.

THE DOLLAR BLOC

During the year the dollar bloc was enlarged by Brazil's adoption of the dollar instead of the franc as the base to which the milreis is to be pegged. With their currencies tied to the dollar, the countries in this group are dependent upon movements in the external value of our currency in determining exchange rates with countries not members of the bloc. Any change in the gold content of the dollar automatically affects a number of other currencies, unless the countries concerned decide to abandon their present relation to the dollar. The movement of the currencies of some leading Latin American countries which appear to be pegged to the dollar may be seen in the following table:

	(in cents)		
	Colombia	Cuba	Mexico
January....	57.39	99.92	27.77
February....	58.27	99.92	27.77
March.....	57.22	99.90	27.77
April.....	57.00	99.90	27.77
May.....	57.00	99.90	27.76
June.....	56.90	99.90	27.76
July.....	56.90	99.90	27.76
August.....	56.90	99.90	27.75
September...	56.50	99.90	27.75

THE FAR EAST

In the Far East, China has definitely abandoned the silver standard and continued a managed currency. The Chinese Government has been able to maintain the stability of her currency and, according to reports she has been assisted greatly through the sale of large quantities of silver to the United States Government. The

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Japanese yen also remained comparatively stable. The movement of these two Far Eastern currencies may be seen from the following table:

	(in cents) Japanese Yen	Chinese Yuan
January.....	28.99	29.66
February.....	29.13	29.91
March.....	28.94	29.82
April.....	28.87	29.73
May.....	29.08	29.69
June.....	29.39	29.89
July.....	29.33	29.97
August.....	29.40	30.05
September.....	29.41	29.94

SUMMARY AND OUTLOOK

The devaluation by the gold bloc countries has removed a chief obstacle to the return of more normal currency conditions throughout the world. The agreement made between the United States, France and Great Britain indicates a desire for currency stability and probably foreshadows the end of wide currency fluctuations. Whether or not Germany, Poland and some of the other continental European countries will follow the example of the gold bloc is, as yet, difficult to say. To judge, how-

ever, by the economic problems confronting Germany, it will not be surprising if during the course of the coming year the German Government should embark upon some monetary changes. These would probably be much more complicated in the case of Germany than in that of any other country because of the dislocations engendered by the existence of numerous official, special purpose marks. But, all in all, the outlook for 1937 seems to point to exchange conditions more stable than they have been during the past few years, but not a return to gold. Neither economic nor political conditions are as yet conducive to such action. Only if economic equilibrium is established in the international sphere together with a more stable political situation, will it be possible to return to a modified international gold standard with an assurance that it will be maintained. In the meanwhile one may expect, on the basis of the agreement concluded, a fairly satisfactory *de facto* stabilization of currencies.

FOREIGN TRADE

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EXPORT AND IMPORT EXPANSION IN 1935

In 1935, for the third consecutive year, foreign trade increased, the total being \$4,330,300,000 compared with \$3,788,000,000 in 1934. Total exports were valued at \$2,283,000,000, representing an advance of 7 per cent compared with the previous year and of 42 per cent from the low level of 1932. General imports were valued at \$2,047,300,000, an expansion of 24.6 per cent over the 1935 figure and of 55 per cent from 1932. On a quantitative basis, exports advanced 4.6 per cent and imports 22.6 per cent. Export prices improved somewhat more than the prices of imports. The merchandise export balance of trade amounted only to \$235,000,000, the smallest figure in recent years except for 1933. Gold continued to flow into the country, net imports being valued at \$1,739,000,000; and net silver re-

ceipts amounted to \$336,000,000. Both gold and silver imports were greatly in excess of the preceding year.

FOREIGN TRADE FOR TEN MONTHS OF 1936

Foreign trade continued to improve during the first ten months of 1936. Exports, including re-exports, reached a value of \$1,998,000,000, an increase of 11.6 per cent from the corresponding ten-month period of 1935. General imports, valued at \$1,978,000,000, showed an advance of 17 per cent compared with the prior-year period. The excess of exports over imports amounted to \$20,000,000 as against \$98,000,000 from January to October, 1935. Gold continued to flow into the country at a somewhat diminished rate, amounting to net receipts of \$984,000,000 compared with \$1,338,000,000 in the first ten months of

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EXPORTS, IMPORTS, AND BALANCE OF TRADE OF THE UNITED STATES

(Values in millions of dollars. Data cover years ended June 30 through 1915; thereafter, calendar years)

Yearly average or year	Merchandise						Excess of exports (+) or imports (-)			
	Exports			General imports	Imports for consumption	Per cent general imports were of total exports	Merchandise	Gold	Silver	Merchandise, gold, and silver
	Total	United States merchandise	Reexports of foreign merchandise							
1910-14	2,166	2,130	35	1,689	1,678	78.0	+477	+17	+20	+515
1921.....	4,485	4,379	106	2,509	2,557	55.9	+1,976	-667	-12	+1,297
1922.....	3,832	3,765	67	3,113	3,074	81.2	+719	-238	-8	+473
1923.....	4,167	4,091	77	3,792	3,732	91.0	+375	-294	-2	+79
1924.....	4,591	4,498	93	3,610	3,575	78.6	+981	-258	+36	+759
1925.....	4,910	4,819	91	4,227	4,176	86.1	+683	+134	+35	+852
1926.....	4,809	4,712	97	4,431	4,408	92.1	+378	-98	+23	+303
1927.....	4,865	4,759	107	4,185	4,163	86.0	+681	-6	+21	+695
1928.....	5,128	5,030	98	4,091	4,078	79.8	+1,037	+392	+19	+1,448
1929.....	5,241	5,157	84	4,399	4,339	83.9	+842	-175	+19	+686
1930.....	3,843	3,781	62	3,061	3,114	79.6	+782	-280	+11	+514
1931.....	2,424	2,378	46	2,091	2,088	86.2	+334	-145	-2	+186
1932.....	1,611	1,576	35	1,323	1,325	82.1	+288	+446	-6	+729
1933.....	1,675	1,647	28	1,450	1,433	86.5	+225	+173	-41	+358
1934.....	2,133	2,100	33	1,655	1,636	77.6	+478	-1,134	-86	-742
1935.....	2,283	2,243	40	2,047	2,039	89.7	+235	-1,739	-336	-1,839

¹ Data are for calendar year, except imports for consumption, which are for the year ended June 30, 1913.

² Period July 1, 1915, to Dec. 31, 1920.

1935. Net silver imports were also lower, with a value of \$174,000,000, as against \$229,000,000.

THE EXPORT TRADE

Exports of finished manufactures improved 16.2 per cent, the largest expansion in all of the export commodity groups, and accounted for 48.1 per cent of the total compared

with 46.4 per cent last year. Crude material exports increased 6.3 per cent and comprised 26.4 per cent of domestic exports, compared with 27.8 per cent in 1935. Crude foodstuffs advanced 7.1 per cent and comprised 2.5 per cent as against 2.7 per cent in the ten-month period of 1935. The remaining export commodity groups revealed minor changes.

FOREIGN TRADE IN MERCHANDISE BY ECONOMIC CLASSES (January-October, 1935 and 1936)

	Proportion of Domestic Exports			Proportion of Imports for Consumption		
	Jan.-Oct. 1935 %	Jan.-Oct. 1936 %	Change in Value 1935-1936 %	Jan.-Oct. 1935 %	Jan.-Oct. 1936 %	Change in Value 1935-1936 %
Crude materials.....	27.8	26.4	+ 6.3	28.4	30.1	+24.0
Crude foodstuffs.....	2.7	2.5	+ 7.1	15.9	14.0	+ 2.8
Manufactured foodstuffs...	6.9	6.4	+ 2.5	16.6	16.3	+14.4
Semi-manufactures.....	16.2	16.6	+ 1.5	19.5	20.2	+21.2
Finished manufactures.....	46.4	48.1	+16.2	19.6	19.4	+15.2

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Most leading commodity exports shared in the general advance in export trade for the ten-month period. Unmanufactured cotton shipments were 5 per cent greater in value. Machinery exports were 28 per cent, and agricultural machinery 35 per cent higher in value. Notable increases occurred also in shipments of chemicals and related products, 12 per cent; iron and steel mill products, 24 per cent; iron and steel advanced manufactures, 22 per cent; sawmill products, 13.7 per cent; dried and evaporated fruits, 28 per cent; photographic and projection goods, 21 per cent; and wheat, mostly flour, 27 per cent. Decreases were recorded in exports of gasoline, 5 per cent; fresh apples, 20 per cent; and packing-house products, 3 per cent, although lard shipments advanced 14.5 per cent.

Exports to all continents increased, Africa recording the greatest proportionate gain—20.7 per cent. Shipments to the Union of South Africa were one-third higher. Oceania showed an increase of 17.2 per cent, shipments to New Zealand expanding one-third. Exports to Canada improved 15 per cent. Sales to Latin America gained 12.6 per cent, with Colombia showing an advance of 30 per cent. Other gains recorded were Venezuela, 20 per cent; Argentina, 15 per cent; Mexico, 13 per cent; Cuba, 12.2 per cent; Brazil, 11.5 per cent; and Chile, 7 per cent. Asia showed an improvement of 11.3 per cent, increases being recorded for China, 23 per cent; Philippine Islands, 20 per cent; and Japan, 10 per cent. Sales to British India declined more than 10 per cent. Exports to Europe advanced the smallest proportion of any of the Continents—8.8 per cent. Important gains were recorded in sales to the Soviet Union, 60 per cent; Germany, 26.1 per cent; France, 24.4 per cent; Sweden, 13.1 per cent; Netherlands, 10 per cent; and the United Kingdom, 8 per cent. Shipments to Spain fell 33 per cent and to Italy they were 15 per cent less.

THE IMPORT TRADE

In the import trade, receipts of crude materials advanced 24 per cent and comprised 30.1 per cent against 28.4 per cent in the corresponding ten-month period of 1935. The share of crude foodstuffs declined from 15.9 per cent of the total to 14.0 per cent, in spite of a 2.8 per cent gain in value. Semi-manufactured imports improved 21.2 per cent; finished manufactures were 15.2 per cent higher; and manufactured foodstuffs likewise advanced 14.4 per cent.

Nearly all leading import commodities shared in the general rise in imports. Marked increases occurred in receipts of cane sugar, 12 per cent; crude rubber, 24 per cent; paper and manufactures, 19 per cent; paper base stocks, 25 per cent; furs and manufactures, 52.6 per cent; hides and skins, 23 per cent; wines and spirits, 65 per cent; cotton cloth, 43.4 per cent; wheat for domestic consumption, 175 per cent; wool and mohair, 74.7 per cent; diamonds, 33.7 per cent; wool manufactures, 52.3 per cent; sawed boards and timber, 47 per cent; and meat products, 33.6 per cent. Imports of a few commodities declined, principal decreases having occurred in receipts of coffee, 4.4 per cent; crude petroleum, 5.8 per cent; flaxseed, 4.3 per cent; copper, 11.5 per cent; and grains, other than wheat, 47 per cent.

All continental sources of imports revealed some gain over the figures for the period January-October, 1935. Oceania, with a rise of 45 per cent, led all the others. Australian shipments to the United States increased 72 per cent. Imports from Canada were 28.4 per cent greater. Asia revealed a gain of 16.7 per cent, the principal advances having occurred in imports from Netherland India, 33.3 per cent; China, 25 per cent; British Malaya, 21.4 per cent; British India, 19 per cent; and Japan, 13 per cent. Receipts from Africa were 20.6 per cent higher, the Union of South Africa improving 71.5 per cent

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and the Gold Coast 38 per cent. Europe showed an improvement of 20 per cent, gains appearing in imports from Belgium, 46 per cent; United Kingdom, 26.6 per cent; Sweden, 24 per cent; Netherlands and Soviet Union, each, 20 per cent; and France and Italy, each, 10 per cent. Receipts from Latin America revealed the smallest increase, ad-

vancing only 6.2 per cent. South American shipments to the United States declined slightly. Major gains in imports from Latin American countries occurred in receipts from Mexico, 17.6 per cent; Cuba, 17.3 per cent; Venezuela, 15 per cent; and Chile, 6 per cent. Decreases appeared in imports from Colombia, 15 per cent and Argentina, 10 per cent.

FOREIGN TRADE IN MERCHANDISE BY ECONOMIC CLASSES

(Values in millions of dollars. Import data are "general" imports through 1933, except 1933 in italics; the latter and succeeding years are "imports for consumption." Data cover years ended June 30 for 1910-14, all other are calendar years)

Yearly average or year	Total value	Crude materials		Crude foodstuffs		Manufac- tured foodstuffs ¹		Semi-manufac- tures		Finished manufac- tures	
		Value	Per cent	Value	Per cent	Value	Per cent	Value	Per cent	Value	Per cent
EXPORTS OF UNITED STATES MERCHANDISE											
1910-14.....	2,130	713	33.5	127	5.9	295	13.8	342	16.0	654	30.7
1921.....	4,379	984	22.5	673	15.4	685	15.7	410	9.4	1,627	37.1
1922.....	3,765	988	26.3	459	12.2	588	15.6	438	11.6	1,292	34.3
1923.....	4,091	1,208	29.5	257	6.3	583	14.3	564	13.8	1,478	36.1
1924.....	4,498	1,333	29.6	393	8.7	573	12.8	611	13.6	1,588	35.3
1925.....	4,819	1,422	29.5	318	6.6	574	11.9	662	13.7	1,843	38.3
1926.....	4,712	1,261	26.8	335	7.1	503	10.7	656	13.9	1,957	41.5
1927.....	4,759	1,193	25.1	421	8.8	463	9.7	700	14.7	1,982	41.6
1928.....	5,030	1,293	25.7	295	5.9	466	9.3	716	14.2	2,260	44.9
1929.....	5,157	1,142	22.2	270	5.2	484	9.4	729	14.1	2,532	49.1
1930.....	3,781	829	21.9	179	4.7	363	9.6	513	13.6	1,898	50.2
1931.....	2,378	567	23.8	127	5.3	247	10.4	318	13.4	1,120	47.1
1932.....	1,576	514	32.6	89	5.7	152	9.7	197	12.5	624	39.6
1933.....	1,647	591	35.9	48	2.9	155	9.4	237	14.4	617	37.4
1934.....	2,100	653	31.1	59	2.8	168	8.0	342	16.3	879	41.8
1935.....	2,243	683	30.4	59	2.6	157	7.0	350	15.6	994	44.3
IMPORTS											
1910-14.....	1,689	595	35.2	203	12.0	194	11.5	307	18.2	389	23.1
1921.....	2,509	859	34.2	300	12.0	368	14.7	362	14.4	620	24.7
1922.....	3,113	1,180	37.9	330	10.6	387	12.4	553	17.8	663	21.3
1923.....	3,792	1,407	37.1	363	9.6	530	14.0	721	19.0	771	20.3
1924.....	3,610	1,258	34.9	425	11.8	522	14.4	665	18.2	749	20.8
1925.....	4,227	1,748	41.4	495	11.7	433	10.2	755	17.9	796	18.8
1926.....	4,431	1,793	40.5	540	12.2	418	9.4	804	18.1	877	19.8
1927.....	4,185	1,601	38.3	505	12.1	451	10.8	750	17.9	879	21.0
1928.....	4,091	1,467	35.8	550	13.4	406	9.9	763	18.6	906	22.2
1929.....	4,399	1,559	35.4	539	12.2	424	9.6	885	20.2	994	22.6
1930.....	3,061	1,002	32.7	400	13.1	293	9.6	608	19.9	757	24.7
1931.....	2,091	642	30.7	305	14.6	222	10.6	372	17.8	549	26.3
1932.....	1,323	358	27.1	233	17.6	174	13.2	217	16.4	341	25.7
1933.....	1,450	418	28.8	² 216	14.9	² 201	13.9	292	20.1	322	22.2
1933 ³	<i>1,433</i>	<i>420</i>	<i>29.3</i>	<i>215</i>	<i>15.0</i>	<i>191</i>	<i>13.3</i>	<i>290</i>	<i>20.2</i>	<i>317</i>	<i>22.1</i>
1934.....	1,636	461	28.2	254	15.5	264	16.1	307	18.8	350	21.4
1935.....	2,039	582	28.6	322	15.8	319	15.6	410	20.1	406	19.9

¹ Includes beverages.

² Revised.

³ See headnote.

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COMMODITY CHARACTER OF EXPORT TRADE IN THE CALENDAR YEAR 1935

Finished manufactures again were the leading group of export commodities, comprising 44.3 per cent of total exports compared with 41.8 per cent in 1934. The value of \$994,000,000 was 13 per cent in excess of the preceding year and represented a similar advance in quantity. Moreover, the increase in finished manufactures constituted practically the entire improvement in the export trade.

Machinery.—Again the second leading export commodity, machinery of all kinds, with a value of \$265,400,000, gained nearly 12 per cent. Industrial machinery at a value of \$122,000,000 was up 23.8 per cent; electrical machinery and apparatus expanded 14.4 per cent to a value of \$76,000,000; and agricultural machinery and implements, with an increase of 48.7 per cent, was valued at \$32,000,000.

Automobiles.—Automobiles, parts and accessories continued as the third leading export commodity with a value of \$227,000,000 which was a gain of nearly 20 per cent compared with last year. Passenger automobiles at \$95,000,000 were up 21 per cent; automobile parts and engines, at \$78,000,000 advanced 20 per cent; and motor trucks, busses and chassis, with a value of \$50,500,000, increased 14 per cent while the volume was 6.5 per cent larger.

Petroleum Products.—Maintaining the position of fourth among all export commodities, refined petroleum products were valued at \$170,000,000, an increase of 7.6 per cent compared with the 1934 figure of \$159,500,000. Exports of gasoline, valued at \$64,300,000, were up 25.5 per cent; and lubricating oil shipments, at \$62,000,000, were 6 per cent larger. Illuminating oil, valued at \$15,200,000, declined 25 per cent from the preceding year.

Finished Goods.—Iron and steel advanced manufactures, with an export value of \$31,200,000, were 12.4 per cent greater. Shipments of cotton manufactures declined nearly 11

per cent to a value of \$38,700,000. Rubber manufactures showed a slight increase with a value of \$22,100,000; but automobile tires, the largest single item in this group, were down 7 per cent to a value of \$9,800,000, the quantity being nearly 19 per cent less. Paper and manufactures advanced 8.7 per cent to a value of \$20,500,000; photographic and projection goods increased 12 per cent to a value of \$17,300,000; books and printed matter gained 25 per cent with a value of \$15,800,000; medicinal and pharmaceutical preparations, with a value of \$12,200,000 were up 12 per cent; and shipments of paints and varnishes were worth \$7,000,000, a gain of nearly 13 per cent. Exports of aircraft, parts and accessories, declined nearly 20 per cent, the value being \$14,300,000.

Crude materials, second export commodity group, comprised 30.5 per cent of total exports compared with 31.1 per cent in 1934. The advance in crude material exports was 4.5 per cent in value and 3 per cent in quantity. Unmanufactured cotton retained leadership of all export commodities, recording a value of \$391,000,000 and comprising 17.4 per cent of total exports. The expansion in raw cotton exports was 4.9 per cent in value and 2.7 per cent in quantity. Unmanufactured tobacco was the fifth leading export commodity and, in spite of a decline of 10 per cent in volume, the value of \$134,000,000 was 7.2 per cent greater. Shipments of coal and coke were valued at \$52,000,000, a decline of nearly 9 per cent in both dollar value and in tonnage. Crude petroleum, with an increase of 25.1 per cent in volume, advanced 23 per cent to a value of \$61,200,000.

Semi-manufactures, third in the export commodity groups, registered a slight increase of 2.3 per cent and comprised 15.6 per cent of total exports. Iron and steel mill products, with a value of \$38,000,000, advanced fractionally, and the tonnage was 9 per cent greater. Chemicals (coal-tar, industrial and medicinal) expanded 8.4 per cent to \$62,300,000. Declines were registered in shipments

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of both copper and saw mill products. Exports of copper, with a value of \$48,900,000 were down 1.7 per cent and the tonnage was 3.2 per cent less; and saw mill products shrank nearly 4 per cent to \$41,100,000, the quantity decline being 3.2 per cent. Shipments of leather advanced 9.1 per cent to \$17,300,000. Furs and manufactures receded 20.5 per cent to a value of \$16,800,000; while naval stores, gums and resins gained 13.8 per cent and were valued at \$16,500,000.

Manufactured Foodstuffs.—Exports of manufactured foodstuffs comprised 7 per cent of total exports and recorded the greatest decline in any of the export commodity groups, falling 6 per cent below the 1934 figure. Packing-house products, with a value of \$43,400,000, were down 34.7 per cent and, on a quantity basis, declined 63.3 per cent. Shipments of lard, the largest item in this group, shrank 54.5 per cent in value to \$11,900,000 and the volume was 77.7 per cent less. Meat products worth \$28,300,000, suffered a more modest decline of 19.5 per cent in value and of 38 per cent in quantity. Canned fruits, at \$23,800,000, were up 38 per cent and the quantity was 35 per cent greater. Wheat flour, at \$15,000,000, was down 20 per cent in quantity and 12 per cent in value.

Crude foodstuffs represented practically the same export value as in 1934 and comprised 2.6 per cent of total exports. Fruits and nuts, exclusive of canned, advanced 22 per cent to \$70,000,000. Shipments of dried and evaporated fruits expanded 19 per cent in quantity and 10 per cent in value to \$24,000,000; and fresh apples, at \$17,300,000, advanced 23 per cent in value and 16 per cent in volume. Wheat, grain, all but disappeared from the export trade, only 233,000 bushels valued at \$212,000 having been exported in 1935.

COMMODITY CHARACTER OF THE IMPORT TRADE

Raw Materials.—The expansion of 24.6 per cent in total imports was shared by all commodity groups. The leading import commodity group

was again crude materials and with an improvement of 26.4 per cent compared with 1934, comprised 28.6 per cent of total imports for consumption. Crude rubber was the third leading import commodity and, with a value of \$119,000,000, advanced 17 per cent while the quantity was slightly greater. The fourth leading import commodity, raw silk, was up 20 per cent in quantity and 33.5 per cent in value to \$95,800,000. Undressed furs, at \$49,000,000, gained 30 per cent; and hides and skins, with a value of \$45,600,000, increased 29 per cent and the quantity was 51 per cent greater. Receipts of oilseeds advanced markedly to \$34,200,000, a gain of 47 per cent and the volume was 39 per cent more. Flaxseed, the leading imported oilseed, advanced 4 per cent to \$15,600,000 and the quantity was 24 per cent higher. Wool and mohair increased 78 per cent in value and 85 per cent in quantity, the value being \$30,000,000. Unmanufactured tobacco also was improved, the value of \$25,800,000 being 2.5 per cent greater and the quantity 8.5 per cent more. Crude petroleum at \$23,400,000 was down nearly 10 per cent in both volume and value. Unmanufactured fibers other than flax and cotton, at \$16,300,000, represented a gain of 53 per cent in value and of 43 per cent in volume.

Semi-manufactures, the second largest import commodity group, recorded the greatest expansion, rising 33.3 per cent compared with 1934 and comprising 20.1 per cent of total imports for consumption. Paper base stocks with a value of \$82,000,000, of which \$70,700,000 was wood pulp, advanced 14.4 per cent and the quantity was 20 per cent greater. Expressed vegetable oils and fats were up 127 per cent to a value of \$78,800,000 and the quantity was 83.4 per cent more. Marked expansion also occurred in receipts of tin bars, blocks and pigs, the value of \$69,800,000 being 56 per cent greater and the quantity 61 per cent higher. Chemicals and related products, including fertilizers, advanced 5.5 per cent to \$68,700,000. Copper, including ore

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and manufactures, improved 19.5 per cent to \$33,200,000 and the tonnage was 20.6 per cent more. Diamonds, at \$24,100,000, gained 56 per cent and the quantity was 76.6 per cent greater. Sawmill products expanded 66 per cent to a value of \$19,600,000; boards, lumber and cabinet woods, sawed, at \$11,300,000 represented an advance of 46.4 per cent in value and of 52.2 per cent in volume. Receipts of nickel ore, matte and alloy gained 28 per cent in value and 29.7 per cent in tonnage; and the reported value of imports was \$17,000,000. Iron and steel mill products improved 60.5 per cent to a value of \$16,600,000.

Finished manufactures recorded the smallest increase of any of the import commodity groups, advancing 15.8 per cent and comprising 19.9 per cent of total imports for consumption. The leader in this group and fifth in the list of all commodity imports was paper and manufactures, which gained 8 per cent and recorded a value of \$93,400,000. Newsprint alone was valued at \$82,300,000, representing an improvement of 7.9 per cent in both value and tonnage. Cotton manufactures, at \$41,000,000 were up 28.6 per cent. Burlaps worth \$33,000,000 were greater by 20 per cent in value and 27 per cent in volume. Receipts of manufactures of flax, hemp and ramie were 10 per cent greater, the value being \$25,300,000; art works, at \$21,600,000, were up one-third; manufactures of wool, including yarns, advanced 34.6 per cent to \$19,700,000; and petroleum—advanced and refined—gained 40.5 per cent in value and 49.6 per cent in tonnage, the value being \$13,500,000.

Foodstuffs.—As an import commodity group, crude foodstuffs were slightly larger than manufactured foodstuffs and increased 26.7 per cent compared with the 1934 figure. Crude foodstuffs comprised 15.8 per cent of total imports for consumption. Manufactured foodstuffs, with an improvement of 21 per cent, comprised 15.6 per cent of the total. Our leading import commodity was again

coffee, advancing 2.8 per cent to a value of \$136,900,000 and the quantity imported was 15.2 per cent greater. Our second leading import commodity was cane sugar which increased 13.5 per cent to a value of \$133,500,000 but the quantity imported was 1.4 per cent less. Receipts of fruits and nuts were up 19.6 per cent to \$54,600,000. Wines and spirits receded 16.1 per cent to \$41,200,000. Marked expansion occurred in imports of packing house products, the value of \$34,400,000 being 129.8 per cent greater and the quantity 234.3 per cent larger. In this group, meat products advanced 49.4 per cent to a value of \$19,200,000 with an increase of 76 per cent in quantity; and fats and oil, with a value of \$15,200,000, improved 618.8 per cent and the quantity was 435 per cent greater. These, and other marked advances in imports of foodstuffs, are largely attributed to the drought situation that pertained in the United States. Receipts of cereals also registered great improvement. Feed grains other than wheat, with a value of \$31,700,000 were up 172.1 per cent and the tonnage was 233.6 per cent more. Imports of wheat, including that for grinding in bond and export, were valued at \$9,300,000 representing an advance of nearly 110 per cent in both value and volume. Fish gained 18.8 per cent in value and 13.2 per cent in quantity, recorded imports being \$27,500,000; cocoa and cacao beans improved 37 per cent in both value and volume, imports being \$26,600,000; receipts of vegetables and preparations were up 14.6 per cent to a value of \$18,600,000; tea improved 5.6 per cent in value to \$17,200,000 and the volume was 12.9 per cent greater; dairy products, at \$15,000,000 were improved 37.7 per cent; and fodders and feeds, with an expansion of 70.3 per cent, were valued at \$12,900,000. One of the few declines in major import commodities occurred in imports of spices, the value of \$10,600,000 being 1.5 per cent less and the quantity 1.8 per cent lower.

X. BUSINESS AND FINANCE

GEOGRAPHIC DISTRIBUTION OF EXPORTS

Europe.—With the exception of exports to the Continent of Asia, the geographic distribution of our foreign trade—both exports and imports—evidenced only minor proportionate changes from the characteristics of the year 1934. Europe was again the

largest continental market for American merchandise. Shipments to Europe advanced 8.4 per cent and comprised 45.1 per cent of the total. All principal European countries, with the exception of Denmark, Germany, Netherlands and Switzerland purchased more American merchandise than in 1934.

FOREIGN TRADE BY CONTINENTS AND TRADE REGIONS

Exports include re-exports of foreign goods. Data for 1910-14 cover years ended June 30; all other are for calendar years. The Philippine Islands are included in Asia for all years; Turkey in Europe is included in Asia beginning 1928; U. S. S. R. (Russia) in Asia is included in Europe beginning 1935.

(Values in millions of dollars)

Yearly average or year	North America				South America		Europe		Asia		Oceania		Africa		
	Northern		Southern												
	Total	Value	Per Cent	Value	Per Cent	Value	Per Cent	Value	Per Cent	Value	Per Cent	Value	Per Cent		
EXPORTS															
1910-14	2,166	320	14.8	181	8.4	121	5.6	1,350	62.3	121	5.6	48	2.2	25	1.1
1921 ...	4,485	600	13.4	529	11.8	273	6.1	2,364	52.7	533	11.9	113	2.5	73	1.6
1922 ...	3,832	583	15.2	332	8.7	226	5.9	2,083	54.4	449	11.7	102	2.7	56	1.5
1923 ...	4,167	661	15.8	426	10.2	269	6.5	2,093	50.2	511	12.3	146	3.5	61	1.5
1924 ...	4,591	634	13.8	456	9.9	314	6.8	2,445	53.3	515	11.2	157	3.4	70	1.5
1925 ...	4,910	659	13.4	480	9.8	403	8.2	2,604	53.0	487	9.9	189	3.9	89	1.8
1926 ...	4,809	748	15.5	429	8.9	444	9.2	2,310	48.0	565	11.7	213	4.4	101	2.1
1927 ...	4,865	845	17.4	408	8.4	438	9.0	2,314	47.6	560	11.5	194	4.0	107	2.2
1928 ...	5,128	924	18.0	397	7.7	481	9.4	2,375	46.3	655	12.8	180	3.5	117	2.3
1929 ...	5,241	961	18.3	434	8.3	539	10.3	2,341	44.7	643	12.3	192	3.7	131	2.5
1930 ...	3,843	671	17.5	349	9.1	338	8.8	1,838	47.8	448	11.7	108	2.8	92	2.4
1931 ...	2,424	404	16.7	187	7.7	159	6.5	1,187	49.0	386	15.9	42	1.7	60	2.5
1932 ...	1,611	246	15.3	119	7.4	97	6.0	784	48.7	292	18.2	37	2.3	36	2.2
1933 ...	1,675	215	12.8	126	7.5	114	6.8	850	50.7	292	17.4	35	2.1	43	2.6
1934 ...	2,133	308	14.4	178	8.3	162	7.6	950	44.5	401	18.8	57	2.7	77	3.6
1935 ...	2,283	330	14.4	202	8.8	174	7.6	1,029	45.1	378	16.6	74	3.2	96	4.2
GENERAL IMPORTS															
1910-14	1,689	119	7.0	229	13.5	207	12.2	836	49.5	259	15.3	17	1.0	23	1.3
1921 ...	2,509	338	13.5	417	16.6	296	11.8	765	30.5	618	24.6	35	1.4	40	1.6
1922 ...	3,113	367	11.8	456	14.6	359	11.5	991	31.8	827	26.6	49	1.6	65	2.1
1923 ...	3,792	418	11.0	583	15.4	467	12.3	1,157	30.5	1,020	26.9	59	1.6	87	2.3
1924 ...	3,610	402	11.1	593	16.4	466	12.9	1,096	30.4	931	25.8	49	1.4	73	2.0
1925 ...	4,227	459	10.9	522	12.3	519	12.3	1,238	29.3	1,319	31.2	78	1.8	92	2.2
1926 ...	4,431	486	11.0	526	11.9	568	12.8	1,286	29.0	1,401	31.6	68	1.5	96	2.2
1927 ...	4,185	484	11.6	501	12.0	518	12.4	1,276	30.5	1,257	30.0	55	1.3	93	2.2
1928 ...	4,091	500	12.2	461	11.3	569	13.9	1,249	30.5	1,169	28.6	53	1.3	90	2.2
1929 ...	4,399	514	11.7	467	10.6	640	14.5	1,333	30.3	1,280	29.1	57	1.3	109	2.5
1930 ...	3,061	414	13.5	347	11.3	434	14.2	909	29.7	856	28.0	33	1.1	68	2.2
1931 ...	2,091	277	13.3	240	11.5	307	14.7	640	30.6	574	27.5	19	.9	33	1.6
1932 ...	1,323	181	13.7	157	11.9	201	15.2	389	29.4	362	27.4	8	.6	24	1.8
1933 ...	1,550	191	13.2	127	8.8	202	14.0	462	31.9	426	29.4	13	.9	28	1.9
1934 ...	1,655	238	14.4	161	9.7	229	13.8	489	29.6	490	29.6	15	.9	33	2.0
1935 ...	2,047	293	14.3	201	9.8	281	13.7	599	29.2	605	29.5	26	1.3	42	2.0

FOREIGN TRADE

The United Kingdom, as our leading market, took 19 per cent of total exports. Shipments to the United Kingdom were valued at \$433,400,000 and were 13.2 per cent greater. France was the fourth leading market, exports rising 1.1 per cent to a value of \$117,000,000. German purchases of American goods declined 15.4 per cent, the value being \$92,000,000. Germany nevertheless was fifth as an export market. Shipments to Italy advanced 12.1 per cent to a value of \$72,400,000; Belgian purchases were 16.6 per cent greater, the value being \$58,300,000. Netherlands declined 3.6 per cent to \$49,100,000. The Spanish market increased 8.6 per cent to a value of \$41,300,000; and Sweden's purchases were 15.6 per cent greater, the value being \$38,200,000.

The largest proportionate increase in sales to Europe occurred in exports to the U. S. S. R. With an advance of 64.8 per cent, exports to the Soviet Union were valued at \$24,700,000. Shipments to Greece increased 41.4 per cent to a value of \$6,600,000; Portugal took \$10,800,000 worth of American merchandise, an improvement of 37 per cent; and Poland and Danzig advanced 29.7 per cent to \$24,500,000.

Asia.—The second continental market for American goods was Asia. Exports to Asia declined 5.8 per cent and comprised 16.6 per cent of total exports. The most significant change in the Asiatic market occurred in sales to China, which shrank 44.4 per cent to a value of \$38,200,000. Japan ranked third as an American market and declined 3.4 per cent, exports being valued at \$203,300,000. All other principal countries in Asia showed an increase but the losses in the Chinese and Japanese markets were sufficient to lower sales to the continent as a whole. Shipments to the Philippine Islands advanced 11.7 per cent to a value of \$52,600,000; to British India they improved 14.5 per cent with a value of \$31,400,000; and to Netherland India exports increased 8 per cent to a value of \$10,900,000. The greatest proportionate increase in exports to Asia occurred

in sales to Turkey which gained 67.4 per cent to a value of \$4,600,000.

Latin America (Southern North America and South America) improved 10.7 per cent compared with 1934 and took 16.4 per cent of total exports. Shipments to Southern North America advanced 13.3 per cent and to South America, 7.8 per cent. Mexico was again the leading Latin American market for United States merchandise, sales to Mexico gaining 19.1 per cent and having a value of \$65,600,000. Cuba, with an advance of 32.7 per cent took \$60,100,000 worth of our merchandise. Argentina improved 15.7 per cent to a value of \$49,400,000. Sales to Brazil were up 8 per cent to a value of \$43,600,000. Colombia's purchases declined 1.4 per cent and were recorded at \$21,600,000. Panama gained 13.5 per cent with a value of \$20,800,000. A decrease occurred in the Venezuelan market, with a drop of 3.6 per cent and an export value of \$18,600,000. Sales to Chile advanced 24.3 per cent to a value of \$14,900,000. All Central American countries, with the exception of British Honduras and Panama, purchased less American merchandise than in 1934.

Canada.—Northern North America, with 14.4 per cent of total exports, gained 7 per cent compared with the previous year. The Dominion of Canada was again second as a market for our goods, accounting for 14.2 per cent of the total. Sales to Canada were valued at \$323,200,000, representing an improvement of 6.9 per cent.

Africa, with 4.2 per cent of total exports, registered an expansion of 25.3 per cent. Sales to the Union of South Africa, valued at \$52,900,000, were 15.9 per cent greater. Egyptian purchases were up 52.5 per cent to a value of \$10,500,000; and British West Africa also recorded a large increase of 41.4 per cent, with a value of \$5,400,000.

Oceania, with 3.2 per cent of total exports, advanced 29.3 per cent compared with 1934. Sales to Australia, worth \$57,100,000, gained 32.1 per cent; and exports to New Zealand,

with \$15,600,000, were 20.1 per cent greater.

SOURCES OF IMPORTS

Asia.—The widespread expansion in our import trade in 1935 was reflected in purchases from all Continents. Asia slightly exceeded Europe as a source of imports into the United States, supplying 29.5 per cent of the total and registering an improvement of 23.4 per cent. Increases occurred in our purchases from all principal Asiatic countries. Japan was third as a source of American imports; and shipments from Japan, with a value of \$152,900,000, showed a gain of 28.2 per cent. Our fourth leading supplier—British Malaya—advanced 24.7 per cent to a value of \$131,600,000. The Philippine Islands, with \$97,000,000, revealed an improvement of 10.5 per cent. Purchases from China, valued at \$64,200,000, were up 46.1 per cent. British Indian shipments to the United States advanced 12.5 per cent to a value of \$62,000,000. Netherland India gained 18.5 per cent and the import value was \$50,300,000.

Europe, the second leading continental source of imports, advanced 22.4 per cent and comprised 29.2 per cent of total imports. All principal European countries, with the exception of France, Norway, Portugal and Rumania shared in the expansion. The United Kingdom again was the second leading source of our foreign purchases, shipping us \$155,300,000 worth of merchandise, representing a gain of 34.6 per cent. Germany, with \$77,800,000 was 13.1 per cent greater. France declined 4.8 per cent to a value of \$58,100,000. Receipts from Sweden improved 21.5 per cent, the value being \$41,200,000. Netherlands gained 42.8 per cent, purchases being recorded at \$40,600,000 and Belgium advanced 52.1 per cent to a value of \$39,800,000. Purchases of Italian merchandise gained 8.2 per cent, the value being \$38,700,000. The largest proportionate increase in purchases from European countries occurred in imports from Denmark, with a value of \$3,300,000

and representing an expansion of 75.8 per cent.

Latin America ranked third as a continental source of our foreign purchases. Imports from Latin America advanced 23.9 per cent and comprised 23.5 per cent of the total. The increase was fairly well distributed as between Southern North America and South America; and also as among the several countries, with the principal exception of Venezuela and, in addition, a number of small Central American and West Indian states. Cuba was fifth as a source of American purchases and, with an advance of 32.1 per cent, accounted for imports of \$104,300,000. Brazil improved 9.0 per cent to a value of \$99,700,000. Argentina registered a marked expansion of 121.8 per cent and the value was \$65,400,000. Receipts from Colombia gained 7.1 per cent to a value of \$50,400,000. Mexico was up 16.4 per cent with a value of \$42,500,000 and Chile increased 5.2 per cent to a value of \$24,100,000. Imports from Venezuela dropped 3.1 per cent and were recorded at \$21,400,000. The noteworthy expansion in imports from Argentina (and also from Uruguay, which gained 46.2 per cent to a value of \$6,900,000) is to be attributed to the need in this country for agricultural commodities, the production of which had been seriously curtailed by the drought.

Canada.—Imports from Northern North America advanced 22.9 per cent and comprised 14.3 per cent of total imports. The Dominion of Canada was again the leading source of imports, with 14 per cent of the total. The value of purchases from Canada was \$286,400,000 and represented an increase of 23.6 per cent.

Africa, with 2.0 per cent of total imports, improved 25.2 per cent. British West Africa, with a value of \$13,900,000, gained 51.1 per cent. Egyptian shipments declined fractionally to 8,900,000. The Gold Coast, with \$8,500,000, was up 60 per cent. The largest increase in purchases from Africa occurred in imports from Algeria and Tunisia, with a gain of 71.5 per cent and a value of \$3,000,000.

THE EXPORT AND IMPORT BALANCE

Oceania, with an import value of \$26,000,000, comprised 1.3 per cent of total imports and recorded an expansion of 81.8 per cent. Our purchases from Australia, valued at \$14,700,000, were 70 per cent greater; and from New Zealand, with \$10,400,000, were 85.2 per cent higher.

THE EXPORT AND IMPORT BALANCE

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GENERAL COMPARISONS IN VOLUME AND VALUE

Merchandise exports again exceeded imports in 1935, thus maintaining unbroken our national trade record of three-score years. In contrast with the balance of \$481,000,000 for 1934, which approached the average peace year balance of the past four decades, the balance for 1935 declined sharply to \$255,000,000. At this level it barely equalled one-fourth the peak "boom era" balance of 1928, and approximated the low depression balances of 1932 and 1933.

The dollar volume of exports showed only moderate improvement over the preceding year with a gain of around 7 per cent. The gain for import values, on the other hand, was about 27 per cent. The relationship of gains for the dollar volume of exports and imports was thus practically the opposite of 1934 when the increase of export values was 27 per cent, and that of import values was about half of this percentage. The advance of both export and import values for 1935 reflected primarily an increase in the quantum of exports and imports, no substantial change being registered in prices. Both export and import values in 1935, incidentally, attained their highest levels since 1931.

The export balance for 1936, excluding all merchandise adjustments from account, will be the smallest since the turn of the century. For the first six months the balance was on the import rather than the export side, though the amount of the passive balance was a mere \$9,000,000 as compared with a nominal active balance of \$30,000,000 for the first half of 1935. By the end of nine

months, the passive balance rose to \$33,000,000, which contrasts with an active balance of \$67,000,000 for the first three quarters of 1935. While the usual seasonal increase of exports relative to imports in the last quarter of the year will undoubtedly convert the import into an export balance, only an exceptional increase could establish an export balance rivalling those of other recent years. It is an interesting fact that the merchandise balance was passive in six of the first nine months of 1936. For a parallel of this record, one must turn back to the trade statistics of the two closing decades of the last century.

INTERPRETATION OF THE EXPORT-IMPORT BALANCE

An active (export) or a passive (import) balance of merchandise trade is the resultant product of an intricate combination of economic and other influences. No simple explanation of either kind of balance is sufficient.

Among the special factors affecting the relative gain of imports as against exports in 1935, the substantial and consistent improvement of domestic business activity was unquestionably of primary importance. Although trade improvement also featured international markets, nowhere in the world was recovery so conspicuous as in the United States. Reflecting the cumulative impact of inflationary monetary policies pursued since 1933, internal recovery was accompanied by an exceptional expansion in the country's money supply, *i. e.*, bank deposits and currency in circulation. The cyclical upswing in trade reen-

forced and accelerated by rapid monetary expansion resulted in a sharp rise in money incomes. Increased monetary demands for goods necessarily found expression in larger purchases abroad, particularly of raw materials.

The expansion of exports was retarded in 1935 by a number of influences. In Europe, gold bloc countries were under persistent deflationary pressure as a result of continuing domestic hoarding and the flight of capital. Central and eastern European countries operating under complex exchange control systems again experienced difficulties in financing their import needs. Exports to China, disrupted both by financial and political difficulties, declined considerably, while exports to Japan also receded. Widespread military rearmament accounted for increases in individual items of American exports, but, since rearmament programs also involved renewed emphasis on national self-sufficiency, it also accounted for an accentuation of protective policies detrimental to American exports.

The rise of imports relative to exports during the first half of 1936 and the reversal of the merchandise balance is to be explained mainly in terms of a continuation of economic tendencies operating throughout 1935. Domestic business activity maintained a much higher level than in 1935, while activity in important foreign markets was only slightly higher. European economic and political difficulties in particular, accentuated by civil war in Spain, reacted unfavorably on our export trade. Price changes for important export and import classes for the first half of the year, though generally upward, were small. The foreign exchange markets, on the whole characterized by a fair degree of stability, none-the-less reflected in their behavior a chronic apprehension over the future value of European "gold bloc" currencies, which the devaluations by France, Netherlands and Switzerland in October proved to be justified.

SETTLEMENT OF THE MERCHANDISE BALANCES

The process of settling merchandise balances can only be described in conjunction with the settlement of other international transactions involving services, capital and income transfers and other international cash payments. Through the mechanism of the foreign exchange markets, a mutual clearance of all simultaneous payments is effected and, when gold standard conditions obtain, this clearance is accomplished at a relatively fixed gold value for the dollar. Each type of international transaction is closely interrelated with other types by monetary and trade influences, even though each individual payment through the exchange market arises out of a transaction originating independently of the rest. Naturally, the chance balancing of payments flowing in both directions goes a long way in facilitating their efficient clearance at any particular time. In the event of a lack of balance, however, gold shipments or changes in the values of foreign currencies combine to aid in making the conditions of clearance complete. The accompanying table, presenting a summary of the "balance of international payments" of the United States for 1934 and 1935, and also for the first six months of 1935 and 1936, supplies a statistical picture of the process.

THE SERVICE BALANCE

What is generally regarded as the service balance of trade is the balance remaining from offsetting international payments for freights, government expenses, tourist travel, immigrant remittances, royalties and similar so-called "invisibles." Consistently "passive" in the post-war period, this balance has usually exceeded the "active" merchandise balance since 1923. It has been, therefore, an important source of dollars enabling foreigners to meet their excess of merchandise imports from the United States without shipments of gold, and it has also been an important source of dollars for facilitating interest and capital payments by foreigners to the

THE EXPORT AND IMPORT BALANCE

BALANCE OF INTERNATIONAL PAYMENTS OF THE UNITED STATES FOR 1934 AND 1935, AND FOR THE FIRST SIX MONTHS OF 1935 AND 1936

Item	1934, Full Year		1935, Full Year		1935, First Six Months		1936, First Six Months	
	Dollar Pay- ments	Dollar Re- ceipts	Dollar Pay- ments	Dollar Re- ceipts	Dollar Pay- ments	Dollar Re- ceipts	Dollar Pay- ments	Dollar Re- ceipts
1. Merchandise Balance ¹ .	+481	.....	+255	.....	+ 29	.....	.....	-9
Exports.....	2,221	.....	2,283	.....	1,024	.....	1,154	.....
Imports.....	.....	1,740	.....	2,133	.....	995	.....	1,163
2. Service Balance.....	.....	-388	.....	-424	.....	-184	.....	-173
Tourist expenditures.	86	331	117	409	43	146	45	160
Immigrant remit- tances and contri- butions.....	5	136	5	120	.....	64	.....	57
Shipping and Miscel- laneous.....	195	207	207	222	131	148	154	155
3. Capital Balance.....	+360	.....	+1,536	.....	+609	.....	+496	.....
Security and Invest- ment funds.....	1,160	958	2,009	1,547	60	.....	264	.....
Short-term funds and Miscellaneous ²	158	.....	1,074	.....	549	.....	232	.....
4. Capital Income Balance	+368	.....	+376	.....	-145	.....	+190	.....
Interest and divi- dends ³	494	126	521	146	215	70	280	90
5. Gold and Silver Balance	.....	-1,303	.....	-2,075	.....	-881	.....	-589
Gold ⁴	53	1,270	2	1,741	3	805	.....	473
Silver.....	17	103	19	355	12	91	.....	116
6. Residual Balance ⁵	+482	.....	+331	.....	+282	.....	+ 85	.....

¹ Export and import figures for the full years 1934 and 1935 include merchandise adjustments.

² Net, including currency movements.

³ Including war debt payments in 1934.

⁴ Including net earmarking operations.

⁵ Due to the influence of lags, unestimated capital and other items.

United States. Its peak was reached in 1929 when the total "passive" service balance aggregated \$1,036,000,000, but the effects of the depression on the main service components (net shipping, tourist, and immigrant payments) brought this total down to the low of \$337,000,000 in 1933. Successive increases since 1933 have raised the passive service balance moderately, but at the total of \$423,000,000 for 1935, it still approximated only 40 per cent of its pre-depression peak. For the first six months of 1936, the Department of Commerce estimated a net "passive" balance of \$173,000,000, as against \$184,000,000 for the first half of 1935. Since

this period covered the seasonal lows both for trade and travel, however, a slightly higher passive service balance may again occur for the year 1936.

THE CAPITAL BALANCE

Throughout the war and post-war period, the United States has been on balance a capital exporter. In other words, the annual balance of all long- and short-term investment transactions across American boundaries since 1914 has typically been a debit or "passive" balance. Viewed in this light, the capital balances of the last three years have been strikingly atypical. In place of a passive bal-

ance, the capital balance since 1934 has been decidedly active. Amounting to \$360,000,000 in 1934, it attained the huge sum of \$1,536,000,000 in 1935. For the first half of 1936, in addition, it totalled \$496,000,000. The cumulative total of recorded net capital imports for the 2½-year period thus amounted to \$2,392,000,000, of which \$1,028,000,000 represented investment funds and \$1,464,000,000 short-term or banking funds. Judging by the large residual balances for unestimated items in the official "balance of payments" reports approximating a cumulated total of \$1,000,000,000, it is entirely possible that actual net capital imports may have exceeded the recorded total by as much as \$500,000,000 more.

This startling reversal of the capital balance in recent years, converting the United States into an importer rather than an exporter of capital, should probably be interpreted as a temporary phenomenon. In 1934, for example, the active balance was largely, but not entirely provoked by devaluation of the dollar. Immediately following official dollar devaluation, a large inflow of American-owned capital, placed abroad for safekeeping during the period of dollar depreciation, occurred. This inflow, in turn, was supplemented by an influx of foreign capital, partly seeking a temporary refuge from unsettled financial and political conditions in Europe and elsewhere, and partly seeking participation in anticipated American business recovery. By the middle of 1935, the repatriation of American capital had largely exhausted itself, but the inward surge of foreign capital continued, especially from Europe, accelerated from time to time by recurring fears of serious financial and political disturbances, and the imminence of a general European war. The acuteness of the latter cause of our excess of capital imports over the past three years was reflected particularly in the influx of short-term funds, which, as previously pointed out, greatly surpassed the net inflow of investment capital.

THE CAPITAL INCOME BALANCE

Despite the reversal of the capital balance in recent years, the United States remains a large international creditor. Accordingly, its capital income balance is regularly a credit or "active" balance. Totalling \$857,000,000 at its post-war peak in 1930, the active capital income balance declined steadily to \$368,000,000 in 1934. The 1935 balance of \$375,000,000, therefore, reflected a nominal recovery from the low of the year before. For the first six months of 1936, official estimates placed the active balance at \$190,000,000, as against \$145,000,000 for the initial half of 1935.

The increase of the capital income balance, modest though it was, at a time when this country was on balance an importer of capital, merits brief explanation. To some extent, it reflects the resumption of interest payments on American foreign investments forced by deep depression into default, and in addition the recovery of earnings and dividends on American-owned foreign properties. On the other hand, it also reflects the character of foreign capital flowing into the United States in recent years. As previously pointed out, the passive capital balance of the past three years was partly attributable to foreign funds seeking refuge and safety and partly to foreign funds seeking participation in American recovery. The former class of foreign funds was necessarily invested in low-yield, short-maturity paper or held as deposit balances without interest and hence did not increase substantially interest and divided payments by this country to foreigners. The latter class of funds was largely employed apparently in purchasing common stocks. Corporation dividends evidently did not increase sufficiently in the time period covered to raise materially the aggregate returns to foreigners on their American investments.

THE GOLD AND SILVER BALANCE

Since the devaluation of the gold dollar at the beginning of 1934, the United States has proved an irresistible

THE EXPORT AND IMPORT BALANCE

ple magnet for gold. For 1934 as a whole, net gold imports totalled \$1,-217,000,000, or approximately 30 per cent more than the dollar value of the world's gold production of that year. During 1935, moreover, net gold imports amounted to \$1,739,000,000, exceeding the year's gold output of the world by 67 per cent. For the first six months of 1936, the gold import balance totalled \$473,000,000, or equivalent roughly to 89 per cent of the world's gold production for the same period. Thus, within the comparatively brief span of two and one-half years, the United States has acquired through its international transactions a total of \$3,429,000,000 of gold. Judging by preliminary figures, the cumulated total of gold imports through the end of 1936 will easily exceed \$4,000,000,000.

As was pointed out in last year's review, the Silver Purchase Act of 1934 renders necessary a special accounting of the silver balance, since this act declares it to be national policy for our monetary reserves to be comprised one-fourth of silver and directs the Secretary of the Treasury to carry out this policy. The net effect of the policy adopted by this act has been to convert the United States from a net exporter of silver into a net importer. Foreign silver purchases by the Treasury resulted in a passive silver balance of \$86,000,000 in 1934, \$336,000,000 in 1935, and \$116,-000,000 for the first half of 1936. The main effect of enlarged silver imports as a result of national silver policy has probably been to reduce the balance of gold imports. This may have served to relieve pressure on the international financial markets, the balances of other classes of international transactions being what they were, but the effect domestically has been the same as if the imports had been in gold. As our complicated monetary mechanism functions, an importation of either gold or silver will normally lead to an equivalent inflation of our domestic money supply unless counteracted by special action on the part of the Treasury, the only public monetary authority now pos-

sessing adequate powers to offset the monetary effects of gold and silver imports.

CONCLUSION

By far the most conspicuous features of American international balances in recent years are: (1) The failure of a persisting rise in our active or export merchandise balance accompanying an extended domestic and international economic recovery. (2) The imposing scale of imports of foreign capital resulting in an active capital balance for three successive years. (3) The unprecedented magnitude of the gold-silver import balances for the past three years.

It may be taken for granted that these more notable aspects of the nation's international accounts are closely interrelated, and that each has been greatly affected by the others. As has been frequently observed, however, capital movements do not find a ready "short-run" expression in a movement of goods and the export-import balance under modern conditions. Hence, the immediate tie-up has apparently been between the capital balance and the gold-silver balance. Judging the statistics of our international accounts as a whole, substantial passive gold-silver balances would have been necessary in the period under review without the impact of the net capital influx. Given the latter, they have inevitably attained the volume recorded.

The impact of the gold-silver inflow from 1934 to date on domestic financial conditions has been distinctly inflationary. Bank deposits have been directly increased as a result of gold-silver import balances, and likewise bank reserves. The reserves of the banking system, in fact, have more than doubled since 1934, and have exceeded actual needs of banks as a whole on one occasion this past year by as much as \$3,000,000,000. To cope with the extraordinary conditions presented by the plethora of gold and silver in our financial system, monetary and banking authori-

ties have been compelled to resort to a number of unusual expedients. The Board of Governors of the Federal Reserve System, for example, raised reserves of member banks 50 per cent as of Aug. 15, and at the turn of the year gave indications to the financial community that a still further increase was impending. In addition, the Treasury announced on Dec. 21 that it proposed to sterilize all gold imports in the future by the sale of public obligations, and to

counteract gold exports when desirable by the purchase of public obligations. Besides this, reports in the press have indicated from time to time that government experts have been giving consideration to various tax expedients which might be applied to impede further imports of foreign capital and encourage the withdrawal of foreign capital now here, thus subjecting the capital and gold-silver balances to a measure of governmental control.

FOREIGN TARIFFS AND COMMERCIAL POLICIES

BY HENRY CHALMERS

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RESULTS OF DISCORDANT DEVELOPMENTS

In the field of foreign trade policy, the year 1936 was marked by two discordant types of developments. While important steps were being taken by a considerable number of countries toward a freer flow of commerce through relaxation of trade barriers and through a more stable realignment of currencies, certain other countries carried further their official controls on foreign trade and the directed diversion of their nationals' purchases to selected countries through quantitative limitations on the movement of goods or on the exchange made available in payment for them.

As a result, United States trade can move more freely and on a more competitive basis at the outset of 1937 than a year ago with Canada, with certain republics of Latin America, and with a number of countries of Western Europe. On the other hand, the strenuous efforts of certain European countries to attain greater self-sufficiency as a whole or in particular products, at almost any cost, have led to increasing restriction and governmental management of their own import trade, and to a widening series of special compensation and exchange clearing agreements with other countries, especially those of Central Europe and of the

Balkans, and, to an increasing extent, with certain countries of South America. Consequently, all of these markets have become more difficult of access than they were in 1935 to the products of the United States and of other countries that are trying to operate on the competitive, free-exchange basis.

THE GERMAN TRADE PROGRAM

The extreme exemplification of this type of program is presented by Germany, and, in view of the widespread series of special arrangements concluded by Germany with other countries, it is the most significant. Impelled by the inadequacy of foreign exchange available to cover its import needs for raw materials and certain deficit foodstuffs, after diversion of a large part of the proceeds from its exports for the purposes of its special nationalistic programs, Germany has resorted to a system of export stimulation through subsidies and aids of various types, and, in many cases, to forced limitation of the use of the proceeds due foreign countries for their goods to the purchase of German products. Under the circumstances, the scope of normal trade with those other countries, as well as with Germany, by suppliers from competing sources is obviously curtailed. Although not so marked as in the case of Germany, something

of this tendency has been noted also in the recent actions of a number of other countries.

OPERATION OF RESTRICTED BILATERAL TRADE

The basic undesirability of the system of what is practically international barter that has been developed by certain European countries during the last few years has been admitted even by the sponsors. Moreover, the disadvantages of the related system of forced annual balancing of trade or of payments between each pair of countries, insisted upon by a number of the European powers in their dealings with the smaller countries nearby and overseas, have often become so evident as to bring open complaint recently, especially from a number of the Balkan countries. At the same time, efforts to bring about closer trade balances with those individual countries from whom their purchases exceeded their sales became more noticeable during the past year on the part of a number of the smaller countries, and spreading beyond Europe to Latin America and to Australia, these efforts being usually defended as defensive measures against the restrictive effect upon their exports of the similar arrangements earlier insisted upon by certain of their important customers.

It is difficult to appraise the prospects of a material weakening of the restrictive bilateral trade system just described. However, the way back to a freer and more open basis for international trading, which almost all governments now profess to be their desire and ultimate objective, has been made easier during the past year by three types of developments.

INFLUENCE OF GENERAL ECONOMIC RECOVERY

First, there is the appreciable progress in economic recovery within many countries. This increased activity is requiring a larger volume of foreign as well as domestic products, and is also stimulating rising prices for many lines of commodities. Price advances have been most marked in raw materials and in certain basic

foodstuffs, the latter partly the result of shorter crops than during previous years. This fact has operated to improve particularly the income of the non-European primary producing countries. One of the indirect effects has been the larger supply of foreign exchange accruing to certain of the South American countries, which has allowed them to furnish exchange more freely for the payment of purchases from abroad, and at more favorable rates.

Without attempting to estimate the extent of the increase in productive activity that represents demands for the non-productive purpose of rearmament programs, or to appraise the soundness of the costly efforts in process in various countries toward greater national self-sufficiency in certain foods or other products, it is obvious that the rate of economic recovery is highly uneven in different areas and of great variability in the likelihood of being maintained.

While international trade still lags behind the rate of gain in internal activity, its impetus has been felt in the perceptibly higher volume and value of goods moving in world trade during 1936. The increase in foreign trade has been most notable on the part of North America, although, for the first time since the depression, Continental Europe shared if only moderately, in the expanding trade movement.

MOVES TOWARD TRADE LIBERALIZATION

In the second place, there is the definite lead to a more liberal commercial policy on the part of the nations generally that has been given by the United States in actively pursuing its program of trade agreements, involving reciprocal reductions of excessive trade barriers and the stabilization of the conditions of trading on a broad equitable basis. In addition to the four earlier agreements, the United States brought into operation during 1936 similar trade agreements with ten governments, including the important countries of Canada, Brazil and Colombia on the American Continent, and France,

Netherlands and Switzerland in Europe. In the case of most of these agreements, which have been in operation for a sufficient period of time and under circumstances that allow a fair judgment, the trade of each of these countries with the United States, both import and export, has shown a greater increase than their trade with the world generally.

Impressed by the bold initiative on the part of the United States, and possibly also by the failure of other methods to revive their foreign trade, the spokesmen for most of the governments represented in the Assembly of the League of Nations strongly endorsed, in October 1936, the importance of working toward the reduction of trade barriers, and on an equality of treatment basis, in so far as financial and other considerations allowed return to more liberal trade policies. Agreements of a trade-liberating character have been concluded during the past year also by a number of other pairs of countries; and with greater frequency than for some time past have agreements of the past year embodied the unconditional most-favored-nation clause.

GOLD BLOC DEVALUATIONS AND TRADE CONTROLS

The third development of the year that has opened the way to freer and more confident trading relations between nations, was the realignment of the currencies of most of the so-called gold bloc countries of Europe (France, Netherlands, Switzerland and Italy), bringing them again close to the pre-depression exchange parities with the dollar and the pound. This action brought further revaluations of the Belgian franc and of the Czech crown and currency readjustments on the part also of a number of the smaller countries of Europe.

An international undertaking was entered into by the United States, Great Britain and France, at the time of the revaluation of the gold bloc currencies in late September, 1936, whereby these three governments would use their exchange stabilization

funds to hold to a minimum fluctuations in the exchange values of their currencies, in which they were later joined by several other European countries. This obviated the commercial uncertainties and possible competitive depreciations or other defensive action on the part of other countries, that had unfortunately accompanied the earlier successive currency revaluations by individual countries acting alone. On the contrary, this action was quite generally hailed by merchants as allowing more normal international price relations, and as giving that much-desired assurance of substantial stability in the financial basis of international transactions, both of which had been lacking for the past five years. Moreover, the currency agreement was accompanied by a joint declaration that the success of the policy was "linked with the development of international trade," the governments attaching "the greatest importance to action being taken without delay to relax progressively the present system of quotas and exchange controls with a view to their abolition."

PROGRESS AND OBSTACLES IN TRADE BARRIER RELAXATIONS

A beginning toward giving effect to this undertaking was promptly made when France, Netherlands, Switzerland and Italy, as well as certain of the smaller countries whose currencies were also revalued, announced reductions in duties, relaxations of import quotas and other measures tending to lower their import barriers. However, these beginnings have not been carried much further since, and some have questioned whether the relaxations announced have even fully offset the increased cost of importing foreign goods into these countries resulting from their devaluations. In view of the increase in prices of varying degree that has been going on in the devaluing countries and, in some cases, internal adjustments also of other types, it is to be expected that some time may elapse before the conditions under which goods may move into these countries under the new currency and

price levels will be definitely established.

However, it is reported that several of the governments concerned hesitate to proceed with a program of broad demobilization of trade barriers set up during the period of currency disparities, partly because of the resistance from the domestic producers loath to lose the additional protection indirectly afforded by the emergency measures, and partly because of a desire to maintain them for the purpose of bargaining with other governments. Attention is called to the fact that the exchange control countries have done little to relax their special restrictions, and, until opportunity is afforded for the devaluing countries to increase their exports materially, they do not feel warranted in allowing a much broader flow of imports. There are indications that the devaluing countries would consider themselves in a position to move more freely in the direction of this relaxation if an effective way could be found for limiting the benefits of tariff or quota easements to countries which maintain a free commercial exchange market and are not artificially promoting their exports, whether through direct subsidies, exchange manipulations or other means.

UNCERTAINTIES AND POSSIBILITIES

In the present state of extreme economic experimentation by certain countries of Europe, of continuing although moderated financial difficulties in many countries, and of an overshadowing sense of general political

uncertainty, the full and successful operation of the new forces that have been put into motion during 1936, capable of working toward the gradual revival and stability of international trade, will obviously depend upon many factors outside themselves. Much can be expected from them, however, in the period ahead if international peace is maintained, if the countries which have contracted these promising trade and exchange agreements during 1936 are courageous and loyal in giving effect to their undertakings, and if the countries maintaining exchange controls and related trade-restricting arrangements see their own long-time interest in taking steps that will make possible the early realization of the broad trade-liberating programs for which so many nations are ready and for which the developments of the past year have opened the way.

CONCLUSION

Apart from the salient developments and tendencies of 1936 just indicated, the year's events in this field have been largely by way of continuation of the same types of measures and arrangements as have marked the tariff and trade-control policies of the respective countries during the last few years. These have been fully discussed in a similar review for last year (see *THE AMERICAN YEAR BOOK*, 1935, pp. 382-92); and, particularly in the present period of unsettlement and opportunistic change, a detailed analysis of the many and confused events of 1936 in this field does not seem warranted.

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PUBLIC PROTECTION OF INVESTORS

BY EDWARD B. HALL

PRESIDENT, INVESTMENT BANKERS ASSOCIATION OF AMERICA

THE PROBLEM INVOLVING CREDIT CONTROL

Attempts at public protection of the investor developed new complications during 1936 due to abnormally low money rates and the persistent advance in security prices. James M. Landis, chairman of the Securities and Exchange Commission, epitomized the change in securities regulation problems when he said: "Today, instead of ministering to a depression, our problem is to administer a recovery." (Address, 25th annual convention, Investment Bankers Association of America, Augusta, Ga., Dec. 4, 1936.)

Public attention was drawn to the dangers inherent in the credit situation during 1935. Charles R. Gay, President of the New York Stock Exchange, stressed it in a widely discussed address before the American Management Association in New York in October, 1935. Mr. Gay said: "What I wish to emphasize today is that when the stock exchanges have done all that they can, when the member banks of the Federal Reserve System have done all that they can, when the Securities and Exchange Commission has done all that it can, there still remains this immense outside factor, an abnormal money market with a gigantic volume of excess reserves, the control of which is not in their hands. . . . Unless this factor is properly controlled, there may be again in the future a wild and runaway stock market culminating in a crash as violent and as dangerous as that of 1929."

Orrin G. Wood of Boston, then president of the Investment Bankers Association of America, referred to the same problem repeatedly in addresses and articles. Typical of his many comments was the following: "Each upward (price) move makes investment advice more difficult and the repercussion from the inevitable downward movement more serious."

Other spokesmen for conservative financial interests called pointed attention to the dormant explosives in the situation.

Rather than any abatement in developments lying behind this well publicized danger, however, money and credit became progressively more abundant in 1936, interest rates correspondingly lower and security prices higher. The influx of foreign funds seeking investment and accentuating domestic difficulties reached a volume that prompted a warning statement from President Roosevelt about the possible consequences of this continual inflow of external capital.

FACTORS IN CONTROL OF SPECULATION

Margin Regulations.—By the end of 1936 thought on investment conditions crystallized to a point where most authorities agreed that the crux of the most vital problem was in the credit situation. Logically, in view of the money-market and security price situation just outlined, the most important moves of the regulatory authorities during 1936 were directed toward testing the controls over credit that have recently been written into Federal laws. Among these controls, the Federal Reserve Board had been given authority, under the Securities Exchange Act of 1934, to regulate margin requirements. Initially the Board, subsequently re-named the Board of Governors of the Federal Reserve System, put into effect a so-called anti-pyramiding formula that had been incorporated into the law and which prevented an increase in the loan value of stocks as they advanced in price. By March of this year, margin requirements on the majority of stocks on exchanges had risen to 45%, an automatic result of their price advances. On March 25, the Board took the first deliberate

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move to control speculation through credit regulation, by increasing margin requirements to 55%. Simultaneously, similar requirements were imposed upon collateral loans made by member banks of the Federal Reserve System, the first use of this additional control authority vested in the Board.

Reserve Requirements.—Again, in August, the Board of Governors of the Federal Reserve System used another new power, one arising not from securities legislation but from the Banking Act of 1935. By regulation the Board increased the reserve requirements of member banks by 50% in an attempt to reduce excess reserves. Since these reserves contributed to the condition of ease in the money markets and that condition was a major factor in security markets, the move was definitely one designed to effect the security markets.

Gold Import Policy.—Similarly, the Secretary of the Treasury, in December, acting entirely beyond the sphere of securities legislation, *per se*, changed the policy under which gold was imported in an attempt to sterilize additions to the domestic gold stocks which were considered an important cause of the growing excess of bank reserves.

BANKING QUESTIONS

Up to the close of 1936 these initial steps to regulate security movements through credit controls had not stopped the advance, though no one knows how much they may have retarded it. Consequently among the questions that confronted the financial world at the beginning of 1937 were: What additional moves will be tried? Can any regulatory measures check the development of inflationary influences before they cause inordinate increases in prices of securities, commodities and real estate, and lead to another collapse?

Under discussion at the close of the year were further increases in bank reserve requirements, and liquidation of government securities from the investment accounts of the Federal Reserve banks. Banking authorities

were reported to believe that this combination of moves could eliminate the excess reserves. "Sterilization" of new gold imports would be expected to prevent re-creation of the excesses. Remaining, of course, would be the problem to prevent the inflation that might result from greater use of the large bank deposits which to date have exerted only part of their potential influence because of the low velocity of their turn-over.

That governmental authorities also included control of bank deposits on their agenda was indicated, however, by statements made by Marriner S. Eccles, Chairman of the Board of Governors of the Federal Reserve Board, just before the close of the year. Addressing a group of New England bankers (Bank management conference of the New England Council, Boston, Nov. 13, 1936), Chairman Eccles laid down a four-point program of control: (1) Balance the budget and begin to retire government debt in order to extinguish bank deposits; (2) Curtail excess bank reserves, if necessary, even to the extent of forcing banks to borrow from the Federal Reserve Banks; (3) Sterilize or, still better, prevent further capital imports; and (4) Increase the taxes which foreigners must pay on their investments here.

ADMINISTRATION OF SECURITIES ACTS

Although most of the new experiments with Federal control of securities transactions were thus outside the legislation dealing directly with such matters, efforts to develop and adapt the new securities laws were continued. The Securities Act of 1933 was by many considered unworkable and it is a fact that practically no new issue business was undertaken until after it was modified by amendments in 1934. These amendments were incorporated in the Securities Exchange Act under which the Securities and Exchange Commission was created to administer both the Exchange Act, governing transactions in outstanding securities, and

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the 1933 act, dealing with public sale of new securities.

Besides creating the new Commission to take over administration of the 1933 law from the Federal Trade Commission, the amendments delegated to the Commission authority for regulating some phases that were originally covered by inflexible statutory provisions. Other revisions gave sharper definition to civil liabilities imposed for violations and removed some of the most criticized features of the original liability provisions. As a result of these modifications the new capital market was reopened early in 1935 upon the issuance of regulations by the new Securities and Exchange Commission. Subsequently the Commission has devoted greater attention to the administration of the Securities Exchange Act which gave it control over transactions in outstanding securities.

Fortunately for financial and business interests, the Securities Acts have had careful administration during this period of development, first under Joseph P. Kennedy, the original chairman, and under James M. Landis, his successor. Both have made it a policy to invite suggestion and counsel of the particular group or section of the business effected by proposed regulation. At times tentative regulations have been drafted and offered for review and criticism by those to whom they were intended to apply before being formally adopted. In the case of stock exchanges the Commission sometimes proposes new or changed rules to the governing body of the exchange with the suggestion that they be inaugurated through internal authority rather than by the Commission.

REGULATION OF OVER-THE-COUNTER BUSINESS

Currently an attempt is being made to build up machinery for regulation of the over-the-counter business in securities through creation of the Investment Bankers Conference, Inc., designed as an organization to act as liaison between the Commission and the several thousand of security dealers throughout the country who

deal in stocks and bonds over-the-counter, *i. e.*, not on stock exchanges.

Regulation of the over-the-counter business has taken the fraud-prevention approach. Registration is required under authority of the Federal Government to control interstate commerce and the use of the mails. The Commission also is trying to build up a clearing house for information on security frauds through which the work of private and state fraud-fighting agencies can be coordinated and made effective across state lines.

BROKER AND DEALER SEGREGATION

Over the last several months the Commission, at the direction of Congress, has investigated the feasibility and advisability of segregation between the broker and dealer function. Its report to Congress on the subject declared that no additional legislation was considered necessary but that the Commission would undertake experiments under existing authority. The report also indicated that the major attention would be directed toward stock exchange members acting in dual capacities, as agent in some transactions and for their own account in others. In that connection a system of reports on the volume of trading by exchange members for their own account was inaugurated this year, presumably to develop more precise information as to the extent and influence of the dual activities.

In its report, the Commission indicated that it would approach the matter of segregation cautiously. It said: "The Commission does not feel justified in recommending at this time the inauguration of a program the effects of which upon the over-the-counter markets and upon investors in securities traded in those markets would be too largely conjectural." At another point it recognized the prevailing conviction "that segregation would inevitably close most of the smaller exchanges throughout the country." In specific reference to bonds, it stated: "Enforced segregation in the bond mar-

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ket might actually bring about the disappearance of the brokerage function in that market. It might also seriously effect the continuation of the exchange bond market."

Those engaged in the security business have taken a cooperative attitude toward Federal regulation just as they did when state regulation was introduced 25 years ago. Orrin G. Wood expressed the official attitude of the Investment Bankers Association of America in these words: "We should welcome intelligent Federal regulation, which will help to fill the gap between the regulation of the States, improve the standards of our business, and help to drive from it those who do not serve the interest of the investor." (Address, 25th annual convention, Investment Bankers Association, Augusta, Ga., Dec. 4, 1936.)

STATE REGULATION

State regulation presented no new developments over the last few years comparing in public interest to events incident to the advent of Federal regulation. A development of importance in state regulation was the revival of efforts toward coordination of activities in the several States. It would be difficult to present the matter more concisely than it was put by Mr. Wood in the address previously referred to. He said: "In the early days of Blue Sky legislation there was a lack of any degree of uniformity. Each State, as it adopted this type of legislation, tried to improve on what had gone before. Eventually the situation was approaching a chaotic condition that threatened to preclude nation-wide distribution of securities. This association interested itself in the problem and its efforts were welcomed by the States. The result of the co-operation thus developed is that there is now practical uniformity of law in a number of States with certain fundamental provisions adopted in many others. The state laws, however, necessarily provide that the administrative officer shall have broad powers in prescribing rules, regulations and forms. The result

is that there are many roads which need to be traversed where a security is to be widely offered.

"For several years past there have been suggestions by securities commissioners, investment bankers and investors as to the possibility of substantial uniformity in practice and procedure, including rules, regulations and forms for compliance with the State securities laws, particularly those of the regulatory type. In 1936, S. Paul Skahan, then president of the National Association of Securities Commissioners, appointed a committee to study this question. At the recently-held convention of that Association Mr. Landis, Chairman of the SEC, in the course of his address stressed the importance of coordination between the various States and the Federal Government, and the advantages to be gained by means of uniform forms and procedure. At the closing session of the convention further impetus was given to this important subject by a vote which continued the special committee of the National Association of Securities Commissioners established to effect better cooperation between the commissioners of the various States and empowering it to appoint subcommittees for the purpose of studying particular forms and particular sections of the several Securities acts for the purpose of suggesting and recommending uniformity in these fields. It further recommended that these committees through the Field Secretary of that Association, work with all outside agencies which might be of help to them in this work, and more especially the Investment Bankers Association, the American Bar Association, and the Securities and Exchange Commission. I am glad to report that your Board of Governors authorized your incoming President to appoint such a committee as he sees fit, to cooperate in every way in the solution of this difficult but important problem."

FEDERAL AND STATE COORDINATION

One further new development of the year in regulatory measures ap-

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appears too important for omission. In the new securities law of the State of South Carolina, provision is made for "registration by notification" of securities defined as "seasoned" by the Securities and Exchange Commission. This experiment at effecting coordination between state and

Federal regulation by statute appears a logical and sound approach to the problem of eliminating duplication of effort and of preventing conflicts. It will undoubtedly be observed carefully by authorities in other States and, if successful, should rapidly gain adoption elsewhere.

PUBLIC REGULATION OF COMMODITY EXCHANGES

BY ARTHUR RICHMOND MARSH

MEMBER, NEW YORK COTTON EXCHANGE

GENERAL

In the discussion of the "Public Regulation of Commodity Exchanges" in the 1935 issue of THE AMERICAN YEAR BOOK (pp. 392-394) it was observed that a distinctly notable feature not only of the year 1935 itself but of the entire period since the re-organization of the country's economic and financial system was undertaken by the present National Administration had been the almost complete absence of fresh attempts on the part either of the Executive branch of the Government or of the Congress to devise or to apply additional means of regulating the activities of the great commodity exchanges, or organized futures markets, which exert a constantly increasing influence upon the distribution of the major agricultural products and many other essential commodities, as well as upon the prices commanded by these commodities in the domestic and international markets.

This comparative neglect of the commodity exchanges by the governmental authorities was the more noticeable because one of the principal objectives of governmental policy under the New Deal has been the bringing of the country's stock exchanges and other security markets under effective governmental regulation. To this end the far-reaching Securities and Exchange Act (sometimes called the Stock Exchange Act) was passed by Congress and approved by the President on June 6, 1934, the Securities and Exchange Commission

authorized thereby being promptly organized and proceeding at once to make exhaustive inquiries into the methods and practices obtaining in the security markets and to formulate drastic regulations governing dealings thereon.

It would appear, however, that, in the domain of commodity trading, the Administration was long disposed to regard the problems most immediately pressing upon it to be those of the notorious over-production, excessive supply and ruinously depressed prices of the country's chief agricultural products, and deemed it expedient to attack these problems through such legislation as the Agricultural Administration Act and various loan and relief measures before giving serious attention to the commodity exchanges concerned with these products. Hence until well on in 1936 the existing national legislation affecting the commodity exchanges—The United States Cotton Futures Act and the United States Grain Futures Act, both passed many years ago—was left unamended and unenlarged, nor did the administrative officers of the Government undertake in any serious way to interfere with or to regulate operations in these markets.

It is true that at a time when administrative and legislative minds were to an unprecedented extent occupied with the devising of means of regulating business of all kinds in this country, and when numerous regulatory measures were being formulated and enacted into law, the commodity

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exchanges were not entirely overlooked in governmental circles. In fact, in the course of 1935 the officials of one of the sub-divisions of the Department of Agriculture undertook to prepare a general Commodity Exchange Act, embracing all the commodity exchanges or futures markets concerned with this country's agricultural products, by the terms of which a regulatory commission composed of three members of the Cabinet was given authority to pass upon the propriety of the rules of the exchanges and to regulate the practices of dealers thereon. This project of law was presented to the House of Representatives towards the end of 1935 and was hastily passed by that legislative body, but it failed to obtain the approval of the Senate and hence did not become law at the time. The general impression among dealers in commodities was that nothing more would come of the proposed legislation, since there seemed to be no effective demand, even in governmental circles, for its enactment.

SENATE INVESTIGATION OF COTTON EXCHANGES

Early in 1936, however, a fresh and more definite impulse was given to the movement for governmental commodity exchange regulation by the results of an investigation into conditions obtaining on the leading cotton exchanges of the country which was conducted by the Senate Committee on Agriculture and Forestry, under the chairmanship of Senator E. D. Smith, of South Carolina. In its inception this investigation was quite independent of the regulatory activities and projects of the administrative offices of the Department of Agriculture, being motivated by numerous complaints both from cotton merchants and from cotton farmers that large interests were making improper use of the facilities of the cotton exchanges for their own pecuniary advantage, were very unfavorably affecting and contracting the business transacted in these great futures markets for cotton, one of the country's most important agricultural products,

and as a consequence were unduly depressing the price received by the cotton farmers, representing about one-tenth of the country's population, for their annual production.

With a view to ascertaining the extent to which these complaints were justified by the facts and formulating suitable remedial legislation, if such legislation were found to be expedient, Senator Smith, with the support of the Committee on Agriculture and Forestry, obtained from the Senate a substantial appropriation to cover the expenses of a staff of expert investigators skilled in cotton accounting, to whom was given the task of making a detailed study not only of all transactions entered into upon the country's organized cotton exchanges during the six-year period from the middle of 1929 to the end of 1935, but also of all transactions, whether in future contracts or in spot cotton, entered into by all the principal American cotton firms during the same period. This exhaustive study by accounting experts developed a hitherto unequalled body of specific and authentic information about the methods and practices employed by the dominant interests in the cotton trade of the United States in the marketing of the successive crops of cotton produced by the Southern farmers.

With this background of ascertained facts the Senate Committee thereupon held a prolonged series of public hearings, lasting from February to May, 1936, at which numerous well known representatives of the cotton trade, of the cotton industry and of the cotton producers were given the opportunity to express in great detail their opinions as to the workings of the existing system of distributing American cotton with particular reference to the uses actually made of the facilities of the cotton exchanges in this connection. The great mass of testimony brought out at these hearings—some of it, of course, defensive in character, some of it highly critical—when combined with the statistical material compiled by the official investigators and with the Com-

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mittee's own conclusions, undoubtedly provides students of the subject with much the most complete and accurate picture to be found anywhere of the commercial processes by which American cotton is, at the present time, moved from the producers to the domestic and foreign consumers. The three thick volumes in which the results of the investigation are printed must long remain invaluable not only to everybody concerned with cotton but as well as to all seekers for exact knowledge about the functioning of modern commodity exchanges.

CONDITIONS REVEALED BY SENATE INQUIRY

From the statistical and other information presented to the Senate Committee on Agriculture and Forestry by its own investigators and by various witnesses whose testimony was heard by it, and also from the searching analysis and interpretation to which this information was subjected, it seemed evident that the entire fabric of the present-day domestic and foreign cotton business, *i. e.*, the business of bringing into the channels of trade the cotton produced annually by some 2,000,000 American farmers and distributing this cotton to a wide variety of manufacturers at home and abroad, is directly dependent upon the proper functioning of the great cotton exchanges or organized futures markets for cotton, to which all sorts of interests concerned with cotton resort for the purpose of "hedging," or protecting against loss through adverse price fluctuations, the purchase and sale commitments undertaken by them in the normal course of the business of moving the crop from its producers to its consumers everywhere, whether in the form of raw material or in that of manufactured goods. The highly developed system of contracts for future delivery, under which cotton may be bought or sold for delivery in any month of a full year—the period normally required for the distribution of the season's supply to the 6,000 or 7,000 mills in all consuming countries and for its manufacture into goods in those mills—affords cotton merchants, cotton

manufacturers and goods distributors alike continuous price insurance support in their operations and enables them to perform their several commercial and industrial functions without inordinate financial risk for themselves. The complete dependence of the cotton trade proper, the cotton manufacturing industry and the cotton goods trade upon the proper operation of this system, though already known in a general way to economists and students of marketing, was brought out in great detail and in a most conclusive manner at the Senate Committee's hearings.

At the same time it was brought out that certain flagrant abuses of the system had been developed by powerful interests in the cotton trade, through which these interests had been able to employ contracts for the future delivery of cotton extending over the successive months of the year and localized in more than one futures market at home and abroad, not solely for the purpose of "hedging," or obtaining price insurance, as regards stocks of cotton they hold in process of distribution or as regards their forward commitments in cotton, but still more with the object of securing uncommercial trading profits for themselves through unduly affecting the relative prices commanded by future contracts for specific deliveries in the same futures market or in different futures markets. Through these manipulations the large interests referred to were able to levy tribute upon the general body of dealers in cotton, manufacturers and goods merchants using the futures markets for legitimate "hedging" purposes, putting them constantly at a disadvantage in their transactions and forcing them to buy in or sell out their "hedge" contracts at prices which in a relative sense were not warranted by the actual facts of the demand and supply situation. It is unnecessary here to recite in detail the manipulative devices used to this end, since they can be found in the record of the Senate Committee's hearings. Suffice it to say that these methods and practices were very deleterious to the business of the

PUBLIC REGULATION OF COMMODITY EXCHANGES

great cotton exchanges, causing a very severe contraction of that business and greatly lessening the service rendered by the exchanges to all classes of persons concerned with cotton from the producers to the ultimate distributors of cotton goods.

REGULATION LEGISLATION

With a view to correcting the evils just described a bill for the regulation of practices upon the cotton exchanges was prepared under the auspices of the Senate Committee. Owing to the legislative situation in an expiring Congress, however, the enactment of this bill, as a separate measure for cotton, proved impracticable, and it was decided by the sponsors of the legislation that advantage should be taken of the legislative position of the general commodity exchange measure prepared by the Department of Agriculture, as described above,—a measure already passed by the House of Representatives,—to produce a system of general regulation of the cotton exchanges in conjunction with the exchanges concerned with other major agricultural commodities. Accordingly, with the approval of the Administration, a new Commodities Exchange Act, technically described as an amendment to the Grain Futures Act, was somewhat hurriedly passed by both Houses of Congress in the last days of the session of the 74th Congress, and became law on June 15, 1936. This act related to exchanges, or futures markets, upon which are made contracts for the future delivery of "wheat, cotton, rice, corn, oats, barley, rye, flaxseed, grain sorghums, mill feeds, butter, eggs and *Solanum tuberosum* (Irish potatoes)." It did not relate to exchanges or futures markets, upon which dealings

are had in a considerable number of other domestically produced agricultural commodities, e. g., tobacco, cottonseed oil, hides, tallow, pork and beef products, wool tops. It omitted mention of all commodity exchanges concerned with imported agricultural products, e. g., sugar, coffee, cocoa, silk and rubber. And, finally, it did not cover with its provisions futures markets concerned with the metals, e. g., silver, copper, lead and zinc. For all these unincorporated commodities active futures markets are now in operation in the United States, but these markets are still left entirely without governmental regulation under existing law.

The detailed definitions and provisions of the Commodity Exchange Act are both too numerous and too technical for recital in a brief article. These definitions and provisions cover elaborately both the constitution of the commodity exchanges as regards members, commission houses, brokers, etc., and also the practices permissible in dealings thereon together with those which are prohibited. An outstanding feature of the Commodity Act, however, is the creation of a regulatory Commission, consisting of the Secretary of Agriculture, the Secretary of Commerce and the Attorney General, to which in the last resort may be referred charges of violations of the provisions of the act and which is given the power to revoke the license (or "designation") of any commodity exchange, or futures market, which fails to comply with the provisions of the act. This is a new departure in the way of commodity exchange regulation and its effectiveness for the purpose in view is perhaps still open to some doubt.

X. BUSINESS AND FINANCE

LIFE INSURANCE

By WENDELL M. STRONG

ASSOCIATE ACTUARY, MUTUAL LIFE INSURANCE COMPANY OF NEW YORK

GENERAL

The year 1936 was in many respects a replica of 1935. There were, however, certain important tendencies accentuated. The most important of these was the decrease in the interest rate on new investments. This explains, or perhaps may be said to be the cause of, certain tendencies. One of these was the continuation of large purchases of annuities. Another was the decrease in loans on policies.

NEW BUSINESS

In view of the extent of the general

business recovery during 1936, it is surprising that the total new insurance written, so far as can be judged, will be nearly the same as in 1935. The amount of industrial insurance written increased, while that of ordinary insurance apparently decreased somewhat, and this latter is difficult to explain in the light of business conditions. New group insurance decreased very much; it is notable that for the last three years the total amount written has remained nearly level notwithstanding the changes in financial conditions.

NEW INSURANCE

(Association of Life Insurance Presidents)

(40 companies having 83% of insurance in force in all U. S. companies on Dec. 31, 1935)

(Dollars in millions. First eleven months of each year)

	1934	1935	Per Cent Increase	1936	Per Cent Increase
Ordinary insurance.....	\$5,009	\$5,061	1.0%	\$4,859	- 4.0%
Industrial insurance.....	2,287	2,333	2.0%	2,479	6.2%
Group insurance.....	426	591	38.7%	504	-14.6%
Total insurance.....	\$7,722	\$7,985	3.4%	\$7,842	- 1.8%

Note: This table is only for the purpose of showing the tendency, so far as it is known, in 1936. It corresponds only roughly with results for all insurance in all companies in previous completed years.

ASSETS AND INSURANCE IN FORCE

In assests the gain has been continuous even when the amount of insurance in force was decreasing. There are probably two reasons for this: (1) that the average duration of the insurance has been greater with a consequent higher reserve per \$1,000 of the policy, and (2) that there has been an increasing amount of annuities written which does not show in the statistics for new insurance written or insurance in force.

The years 1932 and 1933 showed very considerable decreases in the amount of insurance in force. This was due to the tremendous termina-

tions in those years. The peak of the terminations came in the winter and spring of 1933, there having been, however, some lag due to the moratorium placed by various States on the payment of cash surrender values. With the improvement in business in 1934 there was a decrease in terminations with the result that the amount in force at the end of 1934 was slightly greater than a year earlier. At the end of 1935 there was a further considerable increase as there was at the end of 1936, these increases in each case being due to the decrease in the terminations from lapse and surrender.

LIFE INSURANCE

AMOUNT OF INSURANCE—ASSETS—INCOME—DISBURSEMENTS

(Including Ordinary, Industrial and Group Business)

(Insurance Year Book. Dollars in millions)

All United States Companies

Year	Number of Companies	New Business	Amount in Force (End of Year)	Admitted Assets (End of Year)	Surplus* (End of Year)	Total Income	Total Disbursements
1935	340	\$14,139	\$100,730	\$23,216	\$1,768	\$5,072	\$3,593
1934	313	14,280	98,542	21,844	1,823	4,786	3,662
1933	318	13,787	97,985	20,896	1,827	4,622	3,917
1932	328	14,514	100,154	20,754	1,944	4,653	3,998
1931	342	17,226	108,886	20,160	1,858	4,850	3,538
1930	352	19,020	107,948	18,880	1,825	4,594	3,199

* Includes amount set apart for dividends to policyholders during following year.

ORDINARY INSURANCE

	1935	1934	1933	1932
Number of companies.....	\$ 275	\$ 248	\$ 252	\$ 260
Amount terminated by death.....	675	685	698	723
Amount terminated by surrender and lapse.....	5,094	6,138	8,211	9,360
Total amount terminated.....	\$7,426	\$8,868	\$11,420	\$12,303

POLICY LOANS

The causes that contributed to the decrease in policy loans a year ago still persist. Among them may be mentioned: (a) the recovery that has taken place; (b) the large amount of terminations by surrender in the years 1933 and preceding—many of the policies surrendered if they had continued in force would have carried loans; (c) ability, where the loan was sufficiently large to make it worth while to borrow from a bank at a lower rate of interest than that

provided for in the policy.

The criticisms of the rate of interest required on policy loans have to some extent continued, the critics losing sight of two essential facts. The first is that most policy loans are small and the expense is proportionately great; the second that the company is under contract to make a loan when desired even though general interest rates are much higher than provided for by the policy, or even if loans elsewhere are unobtainable.

SURRENDERS AND LOANS

(New York Insurance Report)

(Companies Reporting to the State of New York. Dollars in millions)

Year	Number of Companies	Amount in Force (End of Year)	Amount of Policies Surrendered*	Amount of Policies Lapsed*	Paid for Surrendered Policies	Policy Loans (End of Year)
1935.....	51	\$69,350	\$1,966	\$1,740	\$ 772	\$2,989
1934.....	53	68,135	2,624	1,896	924	3,096
1933.....	53	68,177	3,624	2,551	1,177	3,191
1932.....	53	71,478	3,556	3,292	1,137	3,188
1931.....	52	74,636	2,264	2,934	718	2,798
1930.....	52	73,568	1,710	2,792	517	2,337

* Includes group insurance but not industrial.

X. BUSINESS AND FINANCE

INVESTMENTS

The great problem of the companies in the last year has been that of so investing their funds as to earn a rate of interest as high as the reserve rate (3% in the case of most companies). This problem has existed for several years, in fact since the latter part of 1933. It has, however, been growing more difficult continuously. The difficulty has been added to by the calling of many bonds containing the call privilege, so that the companies have had to invest not only the funds obtained from the increase in assets and the normal maturity of loans, but also, in addition, the large amount paid in by the calling of bonds. The result has been an increasing investment in Federal issues at low rates of interest.

While with the changing financial conditions there have been defaults in bonds heretofore considered good, and also some mortgages have had to be foreclosed, the picture is considerably better in regard to each this year than in preceding years.

The low rate at which new investments must be made has raised the question whether the minimum interest rate established by statute, at which reserves must be calculated, should not be reduced below 3% to insure the possibility of a reserve in accordance with the financial conditions of the present era. However, it should be specifically stated that inability to earn 3% on their funds, if the present tendency should continue long enough to bring this about, would not endanger the solvency of any well conducted companies, since the savings from other sources could be relied on to make up the deficit.

One effect of the recovery has been that the non-amortizable securities owned by the companies, which must be included in the annual report at market values, have in general increased in value, the effect being a tendency to increase the surplus.

PROPOSAL OF NEW KIND POLICY

The Superintendent of Insurance of the State of Illinois (Ernest

Palmer) has proposed that a form of policy be issued which will provide for no cash surrender value nor for any loan value except for loans to pay premiums, and in case of lapse for non-forfeiture value only in the form of insurance.

The Superintendent, in proposing this, called attention to the fact that insurance taken for the purpose of safeguarding widows and orphans was often sacrificed by cash surrender or loan. He recognized the fact, however, that policies having cash surrender and loan provisions were proper in some cases and suggested that they be issued but at higher premiums, the difference to pay for the "banking privileges" including the right to call on the company at any time for these values. In order to carry out this suggestion changes in the statutes of most States would be required.

Some of the difficulties caused by the cash loan and cash surrender provisions contained in policies appeared in 1933 when a moratorium was established by many States. The situation has to a large extent been remedied by the action of many of the companies in inserting clauses in the policy contracts allowing a deferment period of several months for such payments.

REORGANIZATION OF THE PACIFIC MUTUAL

During this year the Pacific Mutual, a medium sized company on the Pacific Coast, went into the hands of a receiver. The cause of this was the inadequacy of premium rates for non-cancellable health and accident policies. The company has now been reorganized on terms which do not disturb the life insurance contracts but which involve a scaling down of benefits on the non-cancellable health and accident policies.

DISTINCTION IN DIVIDENDS BETWEEN DISABILITY AND NON-DISABILITY POLICIES

A number of the large companies, because of losses from disability income benefits, have paid lower dividends on policies with these benefits than on otherwise similar policies without such benefits. This was at-

LIFE INSURANCE

tacked in the courts of New York State, one ground being that this was an increase in the extra premium charged for these benefits whereas such premium was set by contract. The Appellate Division upheld the company by a unanimous decision which was later confirmed by the highest court of the State.

DIVIDENDS

There will not be much change in the dividends paid on policies in 1937 from those of 1936. Many companies will continue the same scale; some will make increases, and some will make decreases. On the proceeds of policies which, instead of being taken in cash, are left with the company at interest, the interest rate will in many cases be decreased, in some cases the guaranteed rate only being paid.

MORTALITY AND DISABILITY

The indications are that the mortality has not greatly changed from that in 1935. The experience on disability income benefits continues bad but since these are no longer issued except in an exceedingly small way the effect of this on the companies will gradually decrease with the decrease of the amount of this insurance in force.

GROUP INSURANCE

Notwithstanding the improvement in general business conditions in 1936, the amount of group insurance written has fallen off. It is probable that some, if not all, of this may be due to the Social Security Act, although this act provides rather for old age pensions and unemployment insurance than for life insurance.

PAYMENTS TO POLICYHOLDERS—INTEREST RATE

(Including Ordinary, Industrial, and Group Business)

(Insurance Year Book. Dollars in millions)

Year	All United States Companies:						100 Companies
	Number of Companies	Premiums Received	Dividends Paid	Death Losses Paid	Surrenders and Lapses	Total Payments to Policyholders	Rate of Interest on Mean Invested Funds
1935.....	340	\$3,692	\$424	\$877	\$ 883	\$2,535	4.47%
1934.....	313	3,521	438	875	1,078	2,705	4.68%
1933.....	318	3,322	499	877	1,357	3,016	4.75%
1932.....	328	3,504	563	905	1,346	3,087	5.08%
1931.....	342	3,661	585	915	861	2,607	5.23%
1930.....	352	3,524	554	856	614	2,247	5.31%

INDUSTRIAL INSURANCE

(All U. S. Industrial Companies)

(Insurance Year Book. Dollars in millions)

Year	Number of Companies	Number of Policies (in millions)	New Business	Amount in Force (End of Year)	Amount Terminated by Death	Amount Terminated by Surrender and Lapse	Total Amount Terminated
1935.....	65	84	\$4,722	\$18,298	\$154	\$3,479	\$4,086
1934.....	65	83	4,885	17,651	154	4,111	4,428
1933.....	66	82	4,673	17,154	149	4,515	4,797
1932.....	68	83	4,793	17,265	154	5,450	5,811
1931.....	68	88	4,847	18,274	159	4,412	4,781
1930.....	69	89	4,860	18,287	158	4,101	4,490

X. BUSINESS AND FINANCE

INDUSTRIAL INSURANCE

Industrial insurance shows very little decline in amount written during the depression, and from indications near the end of 1936 may slightly top all previous years in amount of new business and also in

amount in force.

FRATERNAL INSURANCE

While the amount written has increased considerably from the minimum of 1933, the amount in force has decreased each year for a number of years.

FRATERNAL INSURANCE

(All U. S. Fraternal Orders Showing Figures)

(*Insurance Year Book.* Dollars in millions)

Year	Number of Orders	New Business	Amount in Force (End of Year)	Assets (End of Year)	Total Income	Total Disbursements	Net Amount Received from Members	Paid for Claims
1935.....	266	\$ 563	\$6,183	\$994	\$205	\$159	\$152	\$111
1934.....	262	524	6,300	961	198	157	150	115
1933.....	206	502	6,395	906	193	156	152	111
1932.....	226	600	7,123	882	212	167	164	117
1931.....	242	671	7,301	895	236	207	185	132
1930.....	255	1,287	8,946	882	251	199	199	147

FIRE INSURANCE

BY EDWARD R. HARDY

SECRETARY-TREASURER, INSURANCE INSTITUTE OF AMERICA

PREMIUM RECEIPTS

With the increase in business general throughout the country, it might be assumed that there would be an increase in fire insurance premiums for the year 1936 over those in 1935. There was some increase, but not as much as there was in business generally. This is due to the fact that fire insurance on buildings is placed usually for three or five years and therefore only a portion is subject to renewal in any one year and only that proportion would be reflected if there was any increase in the rates on buildings. In the case of stocks the mercantile businesses carrying large stocks are in properties which are protected by sprinkler equipments and have a very low rate which does not vary to a great extent. The small retail stores do not seem to be carrying stocks of as much volume as before the depression began and this is probably a condition which will continue. The develop-

ment of motor trucking makes it so simple for the retailer to replenish his stock within 24 hours that he does not undertake to carry the large stocks which he did in former years. It has been especially commented upon that the small retail stores do not show much increase in their need for insurance.

Taking the fire premiums of the stock companies country-wide, there was an increase of approximately 5% over 1935, thus making the premiums \$496,000,000 as compared with \$473,000,000 in 1935. It may prove to be the case that premiums from fire insurance will not show in the next few years, even though business may continue in a prosperous condition, any marked increase as compared with business in general. The change in basic conditions will account for this.

RATES

The rates for fire insurance have been affected in 1936 in only one way

FIRE INSURANCE

and that is downward. The exceedingly favorable loss ratio for the past five years was bound to be reflected in a demand for lower rates. This has been complied with in many parts of the country. In fact it may be stated that throughout the country there were reductions which, while apparently slight, nevertheless affected the volume of premiums to an appreciable extent. These reductions were not made on all classes of property, but on the better classes, more especially the fireproof buildings and sprinklered risks. Probably this downward tendency has for the present been checked, especially if there should be an increase in losses.

LOSSES

The National Board of Fire Underwriters which is the authoritative source of statistics of losses by fire in the United States shows figures that indicate that each month in 1936, except December, showed a gain in losses over the corresponding month in 1935. December had losses just about the same as December in 1935. The increase in losses throughout the year averaged about 10%. There were no extraordinarily large fires, the losses continuing fairly even month by month. In 1935 the total losses by fire were \$258,000,000; in 1936 they were approximately \$283,000,000.

The losses by fire for which figures are given above do not mean losses for which insurance is paid, but are losses which are due to fire, whether the property be insured or not. Roughly, 65% of the fire loss became an insurance claim in 1936. Of course it can readily be seen that any increase in the losses on insured property would make this ratio correspondingly higher. In 1935 the loss ratio was approximately 35%; it was approximately 40% in 1936.

UNDERWRITING PROFIT

There was available for the first time in 1936 a new type of statistics, as it may be called, which was demanded by the Insurance Department of the State of New York for the year 1935. The purpose of this

was to show for that year—and it probably will be required in future years—the underwriting profit, or the general tendency of the expenditures compared with the actual receipts. The term “underwriting profit” means that the company has received from premiums a sufficient sum of money to pay the losses and the expenses of conducting the business. If the receipts have exceeded the losses and the expenses, there is an underwriting profit. Taking all the business of the stock fire insurance companies and not fire insurance alone, in 1935 there appears to have been an underwriting profit of between 9% and 10%. The difference between these group companies and the casualty companies is shown by the fact that, in the case of the latter, the underwriting profit was slightly less than 2%. It must not be understood that all the fire insurance companies show a profit of between 9% and 10%. There was the greatest variation between individual companies, but for the whole group those were the figures given by the Department.

ACCESSORY LINES

Certain forms of insurance written by the stock fire insurance companies are called “accessory” lines. These include motor vehicle, ocean marine, tornado, inland marine (navigation), aircraft, earthquake, sprinkler leakage, hail, riot, civil commotion and exposure, rain and flood, water damage, frost and freeze and miscellaneous. The total premiums received from these sources by the fire companies approximated \$230,000,000 and about one-half of this was due to motor vehicles and was properly considered as a part of the premiums from automobile insurance. The same is true for ocean marine which, while it includes the risk of fire, embraces so many other hazards that it is not strictly a fire line. The premiums from these two lines amounted to approximately \$150,000,000 and can be deducted from the \$230,000,000, leaving the balance as belonging more strictly to the fire insurance business, but it will be appreciated that as the

X. BUSINESS AND FINANCE

losses run approximately 40% for all of these lines, they contribute to the underwriting profit.

INLAND MARINE

This form of insurance deserves special mention. It is written by the fire insurance companies, practically all of which are empowered by their charters to write ocean marine insurance. Inland marine insurance, strictly speaking, was that form of marine insurance that covered marine risks on inland waters, such as lakes, rivers and canals. With the development of transportation, for instance motor trucks, and the practice of doing business over a large part of the country, there developed a demand for a form of insurance which would include not merely fire, but practically all of the risks of marine insurance, though confined to land and inland water conditions. Competition for this form of insurance between fire companies and their marine branches and the strictly marine insurance companies led to a definition specifying what forms of this might be written by the different branches. The rule adopted is the official rule and in cases of dispute as to which branch may write it, a committee of interpretation passes upon the matter. The value of this form of insurance to the business of the fire companies will be appreciated when it is stated that the premiums of the ocean marine branches of approximately \$33,000,000, are exceeded by the premiums from inland marine by \$2,000,000. The year 1935 was the first year in which the inland marine premiums exceeded the ocean marine and they have continued to do so in 1936. This is an interesting illustration of how modern business requires new forms of insurance and of the ability of the companies to furnish them.

THE ADDITIONAL HAZARDS SUPPLEMENTAL CONTRACT

In England there developed many years ago what is known as a comprehensive policy. It embraces a large number of hazards, some of which are insured by fire companies

and others by casualty companies. Conditions in the United States have not seemed right, until very recently, for the development of such a policy and even now only an approach is being made to it. It has been customary to cover tornado, lightning, and other definite forms of hazard similar to these by a specific clause attached to the policy. During the year 1936 the Additional Hazards Supplemental Contract was provided and for a slightly increased premium it is now possible to have this added to the fire policy and protection afforded against the hazards of windstorm, hail, explosion, riot, aircraft and motor vehicles. No statistics are available at this time as to the results of this comprehensive addition to the fire policy, but it is reasonable to suppose that within five years a high percentage of the policies of fire insurance will have attached to them this supplemental contract. In certain portions of the country it has been possible to issue this contract without appreciably increasing the rate. The parts of the country referred to are those where the tornado and windstorm losses are heavy and where it was quite customary to purchase protection against those losses with the fire policy. In other parts of the country, where that condition did not exist, more educational work will probably be required. This is an illustration of the tendency of fire insurance to adapt itself to the broadening demands of the purchaser.

ASSETS

Under the laws of all the States fire insurance companies are required to retain as a reserve 50% of the premium receipts from policies which are written for one year, 75% of the receipts from policies written for two years, 87½% from policies written for three years, and 90% of the premiums from all policies written for a longer period than three years. With the expenses running slightly above 40%, it is evident that on their policies written for more than one year the additional sum required to be retained by the company as a reserve must be transferred from sur-

MARINE INSURANCE

plus. This makes it necessary and advisable that the fire insurance companies shall have substantial surpluses. This means funds to invest and according to the Argus Fire Chart, from which most of the statistics in this article are taken, the stock fire insurance companies have admitted assets of \$2,250,000,000. This includes American companies, the foreign companies doing business in this country and the reinsurance companies. These sums are invested and, in common with all other investors, the companies take their share of the decreased value. As the investments are usually wisely placed, however, they have also benefited from the increased value of the investments. Thus, while the direct underwriting profits may not be very large, the income from invested reserves and surplus constitutes an important factor in financing the busi-

ness. It is needless, but perhaps wise, to point out that these reserves and surpluses are the sources from which unusual losses, such as conflagrations, are paid.

MUTUAL FIRE COMPANIES

According to the Argus Chart, the mutual fire companies, not including the factory mutual companies which are in a class by themselves, did a business of approximately \$115,000,000 and have a loss ratio about the same as the stock companies, that is 40%, though in the case of the mutuals this is to net premiums written, while in the case of the stock companies it is to premiums earned. Of course, the policyholders, being in a sense the stockholders of the mutual company, receive any dividends that it is possible to declare after the losses and all other expenses have been paid.

MARINE INSURANCE

By DOUGLAS F. COX

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PREMIUMS WRITTEN AND LOSSES PAID

As usual in these reviews, it is necessary to turn to the figures of the previous year, as the figures of 1936 will not be published in complete and available form until about the middle of 1937. In 1935, then, we find that the total "Ocean Marine" premium written was \$33,288,000 as against \$33,187,000 in 1934, a slight increase but still nearly \$13,000,000 below the peak in 1929. The losses paid in 1935 were \$18,609,000—which shows a percentage or "Loss Ratio" of 55.90%, being somewhat lower than the average of recent years. In "Inland Marine" the premium written in 1935 shows a total of \$33,524,000—as against \$31,147,000 in 1934, an increase of \$2,377,000 but still more than \$12,000,000 below the peak in 1929. The losses paid in this division amounted to \$13,266,000, making a "Loss Ratio" of 39.57%, the lowest in recent years. What the results in 1936 will prove to be, it is

of course impossible to forecast with any accuracy. It seems possible that the "Inland Marine" may be fairly satisfactory, but there have been numerous losses among vessels on the ocean throughout the year. How much they will prove to have affected this market, remains to be seen.

HULL BUSINESS

The bulk of the insurance on the hulls of ocean-going American vessels continues to be done by Syndicate C in which most of the American offices participate, both domestic companies and branch offices of admitted foreign companies. A smaller syndicate, composed of American companies only, writes lines on such of the foreign fleets as are offered in this market. These are fleets of which some of the vessels are of such large value that they are not easily placed in the foreign markets alone. The value of the *Queen Mary*, for instance, is greater than the capacity of all the markets of the world and

X. BUSINESS AND FINANCE

the excess has to be taken care of by the British government, in spite of the fact that the companies in this instance stretched their capacity to the utmost, providing, in the aggregate, insurance to the extent of £3,000,000, which is much more than was ever before placed on a single hull.

Another syndicate provides insurance on the hulls of vessels in the Great Lakes and still another writes lines on the hulls of tugs. All of these syndicates conduct their operations from one office, known as the American Marine Insurance Syndicates and they constitute a great convenience for the insuring public, who, through their brokers, can obtain at one office a policy representing almost the entire strength and capacity of the American market and, when disaster occurs, can adjust the claim with one office, instead of a large number, and obtain settlement in one cheque.

The Syndicates have the benefit of the best underwriting talent in the market, as the underwriters, acting as committees, pool their knowledge and experience for the benefit of all concerned, thus enabling many companies to participate in the business which otherwise would find it impossible to do so with any chance of profit. The operations of the first and largest, "Syndicate C," since its organization in 1920, have shown a moderate profit in most of the years but recently it has suffered from an excessive number of losses and at the same time has had to contend with unreasoning competition from the London market, where insurance on American hulls can be placed through brokers almost as conveniently as in New York. There is also a considerable market in America outside the Syndicates.

LONDON MARKET

In ordinary times, the American underwriters are quite content to be in competition with London, as both markets usually are aiming at a profitable result and neither market has any idea of obtaining anything more than a moderate profit, but for some time now the London underwriters, both in the Companies and at Lloyd's, through lack of leadership or co-operation have been writing marine business without regard to possibly disastrous results and in spite of repeated warnings from the most experienced underwriters among them. As the renewal of the yearly insurance on each American fleet is offered, the Underwriters quote lower rates regardless of whether the results of the preceding years have been profitable or the reverse. The American market must to some extent meet this competition or allow the business to go to London.

CARGO BUSINESS

This is not quite so subject to competition from London as is the Hull business but the competition between the American offices is extremely keen and consequently the rates are kept at the lowest possible levels. There are no Syndicates for handling cargo business, such as the Hull Syndicates described above, although there are arrangements affecting certain commodities which involve large values, under which the American offices reinsure each other, thus stabilizing rates and conditions.

DIVISION OF BUSINESS

The number of companies writing Marine business has, of course, an essential bearing on competition and in this connection the following tabulation is of interest:-

Premiums Written	1927	1928	1929	1930	1931	1932	1933	1934	1935
Under \$100,000.....	50	71	96	112	124	131	125	109	125
\$100,000/500,000.....	35	45	39	51	55	42	53	52	51
\$500,000/1,000,000.....	25	20	24	26	21	22	17	23	20
\$1,000,000 or over.....	22	24	27	22	21	15	14	16	16
	132	160	186	211	221	210	209	200	213

This shows that the number of companies increased from 132 in 1927 to 221 in 1931 and in 1935 the number was still 213, and that while the number writing less than \$100,000 each has increased from 50 to 125, the number writing more than \$1,000,000 each has decreased from 22 to 16. On the other hand the total premium, Ocean and Inland, which was \$94,000,000 in 1929, was only \$66,000,000 in 1935. Another interesting comparison is that in 1929 the companies writing over \$1,000,000 each wrote 59.6% of the Ocean business and 72.7% of the Inland, whereas in 1935 the companies writing in that year over \$1,000,000 each wrote only 46.3% of the Ocean business and 53.8% of the Inland. All of this indicates that the present smaller total volume of premium is being spread more widely among the companies than was the case with the larger volume in 1929.

WAR RISKS

This subject has called for continuous and anxious attention by underwriters ever since the outbreak of hostilities in Abyssinia in 1935; during the continuance of those hostilities, the menace of war between European nations was ever present and had to be taken into consideration in fixing rates; in addition, the threatened application of "sanctions" called for protection by insurance and, as the principle had never been put in practice, the underwriters were much puzzled as to the wording of the forms in which the cover should be provided and as to the rates which should be charged. Fortunately, the "sanctions" were never applied and war has not yet broken out between the European nations, so that no losses arising from those causes have had to be paid. On the other hand, the rates which were named and have been modified from time to time, have not been high enough, generally speaking, to be much of a burden on commerce or to increase materially the income of the insurance companies.

Since that time, not only has the threat of war between nations been

hanging over us but the civil war in Spain has constituted a very real danger to vessels using Spanish ports and the Straits of Gibraltar and especially to merchandise on shore in Spain after discharge or prior to loading. It is generally understood that losses of considerable magnitude have actually occurred from the latter cause.

The rates and conditions under which the majority of underwriters are writing war risks to the various ports of the world, are published each day in considerable detail in the *Journal of Commerce* of New York, for the information and convenience of the public. At the present time (middle of November) these rates range from one-half cent to 47½ cents per \$100.

FORWARD COVER AGAINST WAR RISKS

After the World War there was sufficient belief in the idea that there would be no more wars, at least not for a long time, to bring about the following unfortunate situation, from the point of view of the Marine Underwriters. Shippers of cargo customarily take care of their marine insurance needs by means of an "Open Contract Policy" which automatically covers all their shipments against the usual perils as stated therein at rates agreed upon for the various voyages, the only action necessary for the shipper being to declare to the insurance company the particulars of each shipment as it is made, the policy usually continuing in force until cancelled by the company or by the shipper. These policies usually cover the merchandise from the warehouse of the shipper to the warehouse of the consignee although both warehouses may be in the interior of the respective countries. The unfortunate development was that the companies began to include the risk of war in those policies without additional premium, as the risk was considered negligible.

Now that the risk of war is very far from negligible in many parts of the world, the great effort is to sepa-

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rate the insurance against war risk from the insurance against the usual perils either covering it under a separate policy or at least by a separate and specific rate, also to reduce the extent of the cover against war risk prior to loading and after discharge. This last is particularly necessary under the present methods of warfare, as the dropping of bombs from airplanes in areas where enormous values in merchandise are concentrated, would result in claims of such magnitude as seriously to embarrass the underwriters.

Moreover, the rate for insurance against war risk is necessarily subject to violent fluctuations, as a rate which seems adequate for a voyage to a certain port today, might be absurdly inadequate for the same voyage tomorrow, owing to some sudden outbreak of hostilities in the area of the port of destination. Consequently, underwriters are obliged to

avoid quoting rates which will apply to shipments to be made more than a few days ahead.

INLAND MARINE

The most troublesome problem with which underwriters in this class have had to contend is the old one of encroachment by marine on the field of fire insurance. The "Nation-wide Definition of the Underwriting Powers of Marine Insurers" was created a few years ago by agreement between the three classes of underwriters, Fire, Casualty and Marine, and in the States where it has been properly adopted by the Insurance Departments it has met the situation satisfactorily, but in some States, for one reason or another, it has not been so adopted or adopted with modifications, and in those States the problem is still acute, giving rise to various situations which are causing a great deal of trouble.

CASUALTY AND MISCELLANEOUS INSURANCE

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CASUALTY INSURANCE AND CORPORATE SURETYSHIP

The calendar year 1935 marked the end of a cycle in the business of casualty insurance and corporate suretyship. After six consecutive years of underwriting losses, which reached a peak in 1931 and then receded, the business in 1935 produced a nominal underwriting profit which was hailed as an omen of better times to come. Thus, it was anticipated that 1936 would show further improvement, and developments during the year have abundantly justified this expectation. The business is now definitely "out of the red" again. The margin of underwriting profit will not be great because serious problems still remain to be solved.

MOTOR LIABILITY AND COLLISION INSURANCE

The trend for this line is "against the average," as represented by the results for the business as a whole.

Here, instead of steady improvement beginning after 1931, there has been a mixed trend with a marked tendency toward increasing underwriting losses, which still continues. Automobile insurance, largely because of an excellent showing on property damage liability coverage and despite an unsatisfactory bodily injury record, produced a profit in 1932 and 1933; but beginning with 1934 increasing loss has been shown each year and this will probably continue to be an unprofitable field of underwriting for several years to come.

Greater traffic density, improved highways, indifferent enforcement of traffic regulations, inadequate licensing laws, emphasis upon speed in automobile design, intoxicated drivers and fraudulent and exaggerated claim practices are some of the factors that have created a serious situation for the public as well as for insurance carriers. The latter are, however,

CASUALTY AND MISCELLANEOUS INSURANCE

confronted with additional problems complicating their difficulties: first, the injection of political considerations into the establishment of rates in certain states which makes it difficult, if not impossible, to maintain rates which are unqualifiedly adequate and, second, a competitive struggle in which "conference" carriers are being subjected to an embarrassing "adverse selection" as a result of the activities of a small group of "non-conference" carriers, some of which are operating with almost reckless abandon.

The recent transfer of jurisdiction over interstate operators of passenger and freight-carrying motor vehicles to the Interstate Commerce Commission creates new possibilities for insurance, since the regulations of the Commission prescribe definite requirements for insurance coverages protecting shippers and members of the public. Risks of these types have not been written freely in the past because of adverse loss experience. It is hoped that the Commission, by imposing strict rules regarding finances, tariffs, methods of accounting, standards of equipment, operating conditions, accident prevention and licensing of drivers, will so improve conditions in the industry that insurance may be written somewhat more freely in future. A tremendous volume of premiums awaits insurance carriers if the business can be placed on a satisfactory basis.

WORKMEN'S COMPENSATION INSURANCE

The depression worked havoc in this field. The basis of premium computation here is payroll, and the collapse of employment caused premiums to decline to a low level. While this was going on, losses were increasing because of malingering by claimants, abandonment of safety activities by employers and a tendency on the part of administrative state officials and courts to liberalize the interpretation of workmen's compensation laws. At the same time expenses of insurance carriers were difficult to control. They could not be reduced proportionately to the re-

duction in premiums because of critical problems affecting underwriting, safety engineering, payroll auditing and claim adjustments. In addition, the usual difficulties were encountered in some States in obtaining approval of adequate rates. The result was a series of underwriting losses which, in the aggregate, probably exceeded \$150,000,000 for the period 1929-1935.

The line showed an underwriting loss for 1935; but it is in order to predict that 1936 will show no loss. It is not likely that workmen's compensation insurance will ever produce a large underwriting profit in any year. It is certain that the line will not be permitted to develop an underwriting profit over a period of years. State approval of rates is widespread, competition from state funds (competitive and monopolistic) is a reality in some States and an ever-present threat in others and the tendency is to liberalize workmen's compensation laws still further by interpretation as well as by legislative enactment.

In line with their program to develop a rating structure which will accord the individual risk rate treatment consistent with its own experience and with its own peculiar hazard characteristics, stock insurance carriers this year have proposed the adoption of the Retrospective Rating Plan. This plan will be tried in a group of States. It inaugurates a new principle for stock companies. An employer who normally pays an annual premium of \$5,000. or more may elect, at the outset of the insurance transaction, to operate under this new plan. In this event a maximum and a minimum rate are established and provision is made, after the expiration of the policy, for one or more reviews of the actual experience of the policy period and for an adjustment of the rate (subject to the maximum and minimum limitations) on the basis of such experience. Thus the employer is granted an opportunity, at his discretion, to experiment with a plan of limited self-insurance and, through safety measures, to control the cost of his insurance protection.

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MISCELLANEOUS PUBLIC AND PROPERTY DAMAGE LIABILITIES

This group of coverages includes all forms of protection against legal liability for bodily injuries, death and property damage (automobile coverages excepted) available to building owners and lessees, manufacturers, contractors, merchants and others. It is a field in which there is ample room for expansion, since comparatively few persons, firms and corporations are adequately insured against legal obligations already established by judicial procedure, and the scope and number of such obligations is being extended at a rapid rate.

Miscellaneous public liability and property damage liability insurance was profitable until 1931, when a trend set in toward increasing losses which still persists. Rates may be inadequate; if so, the situation will show gradual improvement as experience becomes available and rates are adjusted to a proper level. It seems more likely, however, that another cause for the present adverse experience is the prevalence of fraudulent claim practices, particularly in large cities, where "ambulance chasing" and its attendant evils is an ever-present problem. Insurance carriers have combined to combat these evils through the Claim Department of the National Bureau of Casualty and Surety Underwriters, but it seems an impossible task to eradicate them. An aroused public, working through the courts and the bar associations, may temporarily improve conditions in a particular community; but the experience is that the old practices reappear as soon as public indignation has subsided and repressive measures have been discontinued.

FIDELITY AND SURETY BONDS

Corporate suretyship encountered the test of its career during the depression, when values crashed, subjecting contractors, financial institutions, merchants and others to an unprecedented financial strain. The effect upon corporate suretyship was disastrous. Contractors defaulted,

leaving contracts to be completed; banks closed, causing loss to insurance companies which had guaranteed their deposits; fiduciaries were found to be unfaithful to their trusts; trusted employees indulged in dishonest practices; sureties were required to make good on financial guarantees of all kinds, and many other uncomfortable and expensive situations were encountered. In general, however, the business pursued the even tenor of its way, fulfilled its obligations, took its losses and reformed its policies and practices to conform to the changing situation which attended the progress of recovery.

Continued improvement in the underwriting results on fidelity and surety bonds was evident this year. The bonding business weathered the storm, stability was restored and a favorable experience was again the order of the day. An interesting development in this field has been the perfection of various forms of "blanket bonds" which afford broad coverage of employees and hazards at reasonable cost.

INVESTMENTS

Since insurance carriers rely upon their investments as an important source of income, certain developments during 1936 in this department of their activities should be noted. Security values have appreciated materially with the general rise in the stock market, thus restoring in some measure the loss in surplus caused by the depression. In accordance with a ruling of the National Convention of Insurance Commissioners, stocks are carried at current market values and bonds at amortized values. The "convention" surpluses which appear in published statements of insurance carriers are, therefore, conservatively valued, since market values of bonds are quite generally in excess of amortized values. The difficult investment problem today for the conservatively managed carrier is that of obtaining a diversification of sound investment issues which will yield reasonable interest returns. Dividends are usually paid

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out of investment earnings, and it is becoming increasingly difficult to maintain investment income with which to meet dividends.

CONCLUSION

The year 1936 may be described as a milestone on the road of recovery for the business of casualty insurance and corporate suretyship. A normal status in which all forms of coverage will be stabilized and no problems will trouble executives seems an idle dream impossible of achievement. The business is still

young; it is constantly expanding to meet new requirements for protection of industry, trade and commerce; its coverages are affected (sometimes radically) by changes in economic, political and social conditions. But it has now escaped from the terrible handicaps imposed upon it by the depression and its executives are again free to concentrate their attention upon the perfection of coverages, rating methods and service and thus to increase the value of this branch of insurance to the insuring public.

CHRONOLOGY OF FINANCIAL EVENTS, 1936

(From *The New York Times*, January 4, 1937)

JANUARY

Jan. 2—Stock market begins year with rise of $\frac{7}{8}$ point in averages, following net advance in every preceding month from April to December, 1935, inclusive. Bank of England ceases gold purchases for its reserve, which had increased its gold holdings £7,317,000 between Aug. 8 and year-end.

Jan. 3—Seventy-third Congress convenes for its last session. President delivers annual message in person during evening. Makes no proposals for new legislation and does not claim that trade revival was result of administration policies, but attacks opponents of those policies with great bitterness.

Jan. 4—Stock market averages rise $\frac{1}{2}$ point, then decline $\frac{1}{2}$, on Saturday business of 1,592,000 shares.

Jan. 6—Supreme Court, 6 to 3, declares Agricultural Adjustment Act unconstitutional because of unwarranted use of tax power and invasion of state rights. Justices Brandeis, Cardozo and Stone unite in minority opinion. President in budget estimate asks for \$6,752,000 for fiscal year 1937. Figure is \$893,000,000 below revised estimates current fiscal year, but does not include estimate of relief expenditures. Markets move confusedly on news of Supreme Court. Wheat, after rising 2c, declined $1\frac{1}{8}$; corn

rose 1c and fell 1c; cotton futures up $\frac{1}{4}$ c, down $\frac{3}{8}$, up again $\frac{1}{8}$. On business of 3,731,000 shares, largest since Nov. 22, 1935, day's stock market averages advanced $\frac{1}{2}$ point, then declined $1\frac{1}{8}$. On intimations of arrangement with Mexico to stabilize price, silver declined 1d to $20\frac{1}{2}$ d per ounce, lowest since Aug. 3, 1934. N. Y. price unchanged at $49\frac{3}{4}$ c, maintained unchanged since Dec. 23, but comparing with 71c on April 26, 1935.

Jan. 7—Stock averages rise $1\frac{3}{8}$ points, trading 3,083,780 shares. Wheat down 1c, then up $1\frac{1}{8}$. Cotton down $\frac{3}{8}$ c per lb. for long future months; hog prices up 50c@ \$1 per 100 lbs.

Jan. 8—Steel output 51 per cent of capacity, against $47\frac{1}{2}$ at year-end and $44\frac{1}{2}$ at this date in 1935.

Jan. 9—French bank rate reduced from 5 per cent to 4.

Jan. 10—President extends for another year from Jan. 30 administration's authority, under act of 1934, to revalue gold content of dollar. Soldiers' Bonus Bill passes House, 356 to 59.

Jan. 11—Dollar declines in foreign exchange market; gold engagements cease. Stock market advances; "averages" for first time pass highest 1935 figure, reached Nov. 20, from which there had been reaction of 2 points.

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- Jan. 13—Supreme Court rules government must return to private owners \$200,000,000 of "processing taxes" collected by AAA but impounded by court order.
- Jan. 14—Senate Finance Committee votes 15 to 2 for Soldiers' Bonus Bill with "baby-bond" amendment, despite Secretary Morgenthau's warning of effect on public finances.
- Jan. 15—Steel output unchanged at 51 per cent. Silver at London down 7-16d, to 20 1-16d, lowest since July 27, 1934; New York unchanged. Foreign exchanges move against New York.
- Jan. 16—New York silver price down 1 cent to 48¾ cents; lowest since Aug. 8, 1934. London price falls 3-16d to 19¾d; lowest since June 20, 1934. Foreign exchanges continue to move against dollar. Silver at New York falls 3 cents further to 45¾, lowest since July 30, 1934; at London to 19d, lowest since May 5, 1934, a month before Silver Purchase Bill became law, when price was 19¾d. Dollar lower on foreign exchange.
- Jan. 20—Senate passes Soldiers' Bonus Bill, 74 to 16. Modified "Patman Amendment" to pay in "new currency" voted down, 65 to 23. Silver up 3-16 at London to 19 3-16; down 1 cent at New York to 44¾ cents. Dollar on exchange goes lower.
- Jan. 22—Laval Ministry resigns in France, but franc advances. Silver up ¾d at London, unchanged at New York. Steel output unchanged for third week at 51.
- Jan. 23—Stock market averages highest since Sept. 4, 1931. Rumors circulated of "revaluing" domestic silver at 16 to 1 and further devaluing gold.
- Jan. 24—President vetoes bonus bill; House passes measure instantly over veto, 324 to 61. Sterling rises to \$5.02½, highest since Sept. 5, 1934; franc to 6.68 cents, highest since March 9, 1935. Federal Reserve Board raises "margin requirements" on stock purchases from 45 per cent to 55 on upper limits. Stock market averages fractionally lower. Alfred Sarraut forms French Ministry; declares for maintenance of franc.
- Jan. 25—Morgenthau denies rumors of silver and gold revaluation.
- Jan. 27—Senate overrides bonus veto, 76 to 19, thus passing the bill. Stocks higher.
- Jan. 28—President appoints six of seven members for new Federal Reserve Board. Only Eccles and Szymczak renamed from existing board; others are Broderick, McKee, Morrison and Ransom. Hamilton and Miller, members since Federal Reserve was established, not reappointed. Board generally approved in banking circles. Sterling and francs decline.
- Jan. 29—Stock averages highest since Sept. 3, 1931. Congressional fiat-money party announces "drive" to pay bonus in new currency and not through either taxes or bonds.

FEBRUARY

- Feb. 1—Dollar exchange continues at gold-export point.
- Feb. 3—\$5,605,000 gold engaged for export, of which \$5,240,000 to France, \$365,000 to Holland. Treasury expresses gratification at outward movement; stocks advance.
- Feb. 4—\$8,480,000 more gold taken for export; \$7,980,000 to France, \$500,000 to Holland. Stocks rise to highest of movement; transactions, 3,008,000 shares.
- Feb. 5—Steel output up from 50½ per cent to 52, chiefly on railroad orders.
- Feb. 6—Bank of France reduces discount rate from 4 per cent to 3½, despite loss of 1,193,000,000 francs gold in two preceding weeks, and of 6,252,000,000 in seven weeks before Dec. 7, 1925. Rate was 6 per cent at end of 1925.
- Feb. 7—\$1,075,000 gold engaged for Holland.
- Feb. 8—Week-end engagement of \$3,935,000 gold for export; \$3,050,000 of it for France.
- Feb. 10—Dollar exchange recovers; gold exports cease.
- Feb. 11—Stocks rise on 3,357,000-share business. Ex-President Hoover applies to California court for authorization to invest Stanford Uni-

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versity trust funds in stocks as well as bonds, on ground that devaluation of the dollar, "bank credit inflation," and "the possible menace of currency inflation," are "new factors with which the trustees must deal." New York Federal Reserve Bank earmarks \$9,970,400 gold for China, supposedly due to our government's silver purchases.

Feb. 12—Federal Reserve Advisory Council renews recommendation of November that the \$3,000,000,000 surplus bank reserves be reduced through sale of United States bond holdings by Reserve banks to private banks. Steel output rises to 53 per cent; still below the 53½ of the same week in 1935 and the 57 maximum of December. Railroad buying stated to "dominate the market." Scrap steel at highest price since September, 1930.

Feb. 13—Bank of France reported loss of 249,000,000 francs gold for preceding week. Foreign exchange moves sharply in New York's favor; sterling below \$5 for first time since Jan. 29.

Feb. 14—Exchange moves against the dollar.

Feb. 17—Supreme Court, by 8 to 1 vote, decides sale of surplus power by government from Wilson Dam to be constitutional. Four justices held plaintiffs had no standing in court. Stock market business 4,718,000 shares, largest since Feb. 5, 1934, which immediately followed decree devaluing dollar. Utility stocks on average rise 2¼ points, then decline 3½; general stock market average up 1 point, then down 1½.

Feb. 18—Stocks rise sharply on 3,526,000-share trading. Domestic bond averages advance to highest since Sept. 29, 1930. Rise from this date in 1935 was 6½ per cent. From low point of depression, May 31, 1932, rise had been 70½ per cent. Franc sells lower, despite announcement of \$40,000,000 nine-month credit raised by French Government at London.

Feb. 19—Stock market averages rise then fall under profit-taking; transactions 4,579,000 shares. Steel output rises to 53½ per cent, pass-

ing for first time percentage of same week 1935. Freezing weather restricts production; heavy buying of scrap steel drives scrap price to highest since April 15, 1930.

Feb. 25—Reaction in stocks; averages decline 2¾ points, recovering ¾; trading 2,389,000 shares.

Feb. 26—Army mutiny in Japan reported by cable, three public men assassinated. Particulars vague. Japanese 5½s decline 2¾ points and recover ¾; 6½s decline 5 and recover 2. Tokyo exchange declines about 1 per cent. Steel production rises to 55 per cent, against 53½ week before and 48½ in 1935. Scrap prices go higher; rise \$1 per ton in fortnight.

Feb. 27—Treasury announces March quarterly financing will include offer of \$800,000,000 new securities for cash.

Feb. 28—President informs Congress that \$786,000,000 must be provided in new taxes to cover annual payments necessitated by soldiers' bonus and declaring unconstitutional existing "process taxes" in agricultural program. Advisory Council recommends to Federal Reserve Board "substantial increase in the reserve requirements for member banks" on ground that country's abnormally large holdings "may be largely transitory and temporary" and that it would be "unsound to permit a credit structure to be built on the base of reserves so created." Japanese revolt quelled; Japan 6½s and 5½s recover ½ to 1½ points, respectively.

MARCH

March 3—President recommends to Congress tax on undivided profits of corporations to raise \$1,614,000,000, together with removal of corporation income tax, capital stock tax and excess profits tax, also of exemption of tax on dividends in individual incomes. Estimated rate of new tax 33 1-3 per cent; net annual yield after all changes, \$620,000,000. Stocks active; averages rise 1⅞ points, reacting ¾.

March 4—Stock market strong. Steel output rises from 55 per cent to 56,

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- against 48½ in 1935 and 57 high of December. Railway orders large.
- March 5—Stocks rise; averages highest since August, 1931.
- March 7—Hitler moves German troops into the Rhineland, contrary to treaty. Stock averages decline 1¾ point.
- March 9—European stock markets weaken on Rhineland news, especially at Paris. New York stock averages decline 2¾ points; bonds generally lower.
- March 10—Foreign stock markets recover; Paris reacting strongly. New York stock averages recover 1½ point, then yield ½. Steel output rises from 56 per cent to 57; highest figure of 1935, reached at beginning of December, and not exceeded since third week of June, 1934, when rise of steel prices was impending.
- March 11—Stock market practically recovers loss in prices following Rhineland announcement.
- March 12—Foreign stock markets weaken on Rhineland complications. New York averages fall ¾ points recovering ½ point.
- March 15—Subscriptions, already closed, paid on Treasury's largest cash borrowing since the war. Cash subscriptions to \$650,000,000 offering of 15-year 2¾s, \$5,106,913,850; to \$600,000,000 offering of 5-year 1½s, \$3,354,464,300. Total tenders for \$1,250,000,000 offering, \$8,461,378,100, or cash over-subscription nearly six times.
- March 17—Hitler agrees to conference with League governments at London. N. Y. stock averages up 1½ point; trading 2,241,000 shares.
- March 18—Steel output rises from 57 per cent of capacity to 61, same as second week of June, 1934, but highest figure reached any week since June, 1930. Increased construction activity reported.
- March 19—River overflows in New England, at Pittsburgh and elsewhere, interrupt production and transportation.
- March 24—On Mussolini's announcement of taking over by government of Italian industrial corporations, prices fall 7 to 40 points on Italian Stock Exchange. Italy's 7 per cent dollar bonds fall 4⅞ points at N. Y., Rome 6½s to 3¼.
- March 25—Owing wholly to interference of river overflow at manufacturing points, steel output declines from 61 to 54 per cent of capacity; Pittsburgh operating at not much over 28 per cent, against schedule for week of 46. Wheeling district output, 3 days at 80 per cent, then 58.
- March 26—Bank of France gained gold for week slightly, but discounts rose \$68,000,000 in week, making \$100,000,000 increase within a month, nearly to bank's high record.
- March 28—Bank of France raised official discount rate from 3½ per cent to 5.
- March 30—Trading on Stock Exchange fell to 950,000 shares; smallest full-day business since Oct. 9.

APRIL

- April 1—Steel production 62½ per cent of capacity, against previous highest of 61 per cent since June, 1930—figure reached in June, 1934 and March, 1936. Pittsburgh output 51 per cent, against low point of 28 in preceding week. Hitler makes conciliatory reply on Rhineland controversy. Stock average up nearly 2 points.
- April 2—Stock average rises 2 points to highest figure since Aug. 29, 1931. Bank of France reports loss of gold for week \$7,520,000, increase in bills discounted \$74,200,000.
- April 6—Stock market averages touch highest of upward movement.
- April 8—Steel output up from 62½ per cent of capacity to 66, comparing with 46 at this date in 1935 and reaching the highest since second week of June, 1930.
- April 9—Bank of France reports loss of gold for week \$110,200,000, increase in bills discounted \$84,800,000.
- April 14—Foreign markets reopen after Easter holidays. Stock Exchanges dull and uncertain on political situation, but no pronounced

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- decline. N. Y. stock market averages decline $2\frac{3}{8}$ points but recovers half of loss.
- April 15—Steel production rises from 66 per cent to 68, highest since June 11, 1930. Trade reviews report strong demand from all quarters except building industry. Stocks rise on average 2 points, losing $\frac{5}{8}$ point afterward.
- April 20—Stock averages decline $2\frac{1}{2}$ points.
- April 22—Steel output for week unchanged from previous week's 68 per cent of capacity, according to Iron Age estimates; but Steel Institute estimates advance in capacity production from 67.9 per cent to 70.4. Labor Bureau's employment index was 84.2, against 83.2 in February and 82.5 in March, 1935.
- April 23—Stock market weak; averages decline 4 points, reaching a figure $7\frac{1}{2}$ below the highest of the year reached on April 6.
- April 26—French elections indicate strong swing to Left, but factional majorities impossible to determine until the supplementary voting of following Sunday.
- April 27—Stock market averages decline $4\frac{1}{2}$ points, with trading of 2,303,340 shares. Slight recovery at close.
- April 28—Stock averages fall 1½ points further; trading 2,221,520 shares.
- April 29—House of Representatives passes tax on corporation undivided surplus by 267 to 93, with little debate. Stock averages down $2\frac{1}{2}$ points further. Steel output rises from 68 per cent of capacity to 69.
- MAY**
- May 1—Stock market steadier.
- May 5—Italian army enters Addis Ababa; Ethiopian Emperor in flight; Italian bonds up fractionally.
- May 6—Stock averages rise 1½ points, making recovery of $6\frac{7}{8}$ since low was reached on April 30. Bank of France discount rate raised from 5 per cent to 6. Steel output declines from 69 to 68 per cent of capacity.
- May 7—Bank of France reports decrease of \$77,150,000 gold for week, making \$325,500,000 loss in six weeks.
- May 11—H. R. calls up Frazier-Lemke farm credit and \$3,000,000,000 currency inflation bill; vote 267 to 93.
- May 13—Stock market transactions 580,000 shares, smallest since April, 1935. Steel output down from 68 per cent to $67\frac{1}{2}$, but Iron Age says editorially, "trend of steel demand remains extremely encouraging."
- May 14—H. R. votes down Frazier-Lemke Bill, 235 to 142. Senate abandons corporation tax bill after destructive criticism by experts at committee hearing. Stock averages rise $2\frac{7}{8}$ points, on trading of 1,391,000 shares. French Bank reports week's loss of gold equivalent American values, to \$180,700,000; loss in seven weeks \$506,200,000. Bank of England's gold up £642,000 for week, note circulation rises £2,149,000.
- May 18—Supreme Court, 6 to 3, declares unconstitutional Guffey soft-coal law, regulating hours and wages. Stock averages rise $\frac{7}{8}$ -point, then decline $1\frac{1}{2}$.
- May 19—Stock averages decline 2 points.
- May 20—Stock averages rise $1\frac{1}{4}$. Weekly steel output up from $67\frac{1}{2}$ per cent to $68\frac{1}{2}$ against decline in same week 1935 from $44\frac{1}{2}$ to 43 and 1934 from 61 to 58. Iron Age reports "unseasonably well-sustained demand for heavy steel"; describes orders for structural steel thus far in 1936 as 36 per cent over 1935.
- May 22—Bank of France loses \$34,000,000 gold.
- May 26—Stock trading 1,143,000 shares, against 694,600 day before; stock averages rise 1½ points, to figure $4\frac{1}{2}$ points below season's highest. Steel output down $\frac{1}{2}$ point to 68.
- May 29—Dutch bank raises discount rate from $2\frac{1}{2}$ per cent to $3\frac{1}{2}$.

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JUNE

June 3—Trading in stocks only 635,000 shares. Steel production unchanged at 68 per cent. Bank of Netherlands raises rate $3\frac{1}{2}$ per cent to $4\frac{1}{2}$.

June 5—Sentiment for Landon's nomination strong among Republicans convening at Cleveland. Stock market turns upward.

June 8—Signs of sweep to Landon in Republican convention, about to assemble. Stock market advances on light trading.

June 9—Republican convention opened; Landon in strong lead. Stock market goes higher. Iron Age reports steel production advanced from 68 per cent to 70 per cent, highest of movement according to Iron Ages average, but below 70.91 estimated as May average by Iron and Steel Institute. Iron Age predicts largest output of year for June.

June 11—Landon unanimously nominated by Republicans for President. Platform attacks New Deal and Democratic policies and declares for "a sound currency." Landon publicly interprets money plank as meaning "a currency expressed in gold and convertible into gold" when such a change can be safely introduced. Stock market averages rise $1\frac{1}{2}$ points in million-share day.

June 16—Stock market averages go to highest of period, passing previous maximum of April 6 and recovering decline of $13\frac{1}{8}$ points between then and April 30.

June 17—Steel output rises from 70 per cent of capacity to 71, reaching highest since June 7, 1930. Iron Age reports structural steel takings, 1936 to date, 36 per cent above same period, 1935.

June 18—Bank of France reports loss for the week of \$63,300,000 gold.

June 23—Democratic National Convention opened at Philadelphia. Written protest against Roosevelt's renomination by Alfred E. Smith, Bainbridge Colby, James A. Reed, Joseph B. Ely and Daniel F. Cohalan. Bank of France reduces discount rate from 6 per cent to 5.

June 24—Stock market averages go to new high record since August, 1931. Steel production unchanged at 71 per cent. Dutch bank rate reduced $4\frac{1}{2}$ per cent to 4.

June 25—Democratic platform, adopted at Philadelphia, declares for continuance of Roosevelt social policies, claims the credit for business recovery, but speaks guardedly of Constitution, evades discussion of public deficit, and says nothing of the gold standard or of Roosevelt administration's silver purchases. Sharp reaction in stocks. Bank of France reduces discount rate from 5 per cent to 4; reports loss of only 610,000,000 francs, or \$4,000,000.

June 26—Franklin D. Roosevelt nominated for President by acclamation at Democratic convention. Stock market motionless.

June 29—Dutch bank rate further reduced 4 per cent to $3\frac{1}{2}$.

JULY

July 1—Recovery in franc; gold imports from France cease. Steel production reaches new high level for year at $71\frac{1}{2}$ per cent. Iron Age calculates half-year's output at 21,800,000 tons, exceeding first-half production in 1921-25 and in eight out of the last fifteen years.

July 2—Severe drought in West. July wheat goes above par, first time in 1936; corn $72\frac{5}{8}$ c.; up 7 cents since June. French Bank's gold up \$3,000,000 francs for week, after thirteen successive weekly losses aggregating \$767,800,000.

July 3—Wheat $1.02\frac{3}{4}$; corn $73\frac{1}{4}$ c. Committee on Industrial Organization, headed by Lewis, threatens attack on steel trade company unions.

July 6—Dutch bank rate down $3\frac{1}{2}$ per cent to 3. Drought unbroken. Wheat $1.05\frac{1}{8}$, corn $76\frac{1}{8}$ c. American Federation of Labor fore-shadows suspension of constituent unions which threaten independent action on steel trade.

July 7—Wheat $1.10\frac{1}{8}$, corn $76\frac{1}{8}$ c.

July 8—Steel output down $1\frac{1}{2}$ per cent to 70, compared with $36\frac{1}{2}$ in 1935 and 27 in 1934. Corn rises to $82\frac{3}{4}$ c.; wheat declines 5c.

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July 9—Drought unbroken; temperature at New York 102 1-3 degrees, a high record. French bank rate reduced from 4 per cent to 3. Bank's gold reserve rises \$22,500,000 for week; making \$25,600,000 gain in fortnight, after \$767,800,000 loss in thirteen preceding weeks.

July 10—Stock market averages go to highest since July, 1931. Drought continues. Government crop report estimates largest wheat yield since 1932 and corn yield above ten-year average, but estimates are discredited because based only on conditions of July 1. Wheat rises 3¾c at Chicago, corn 4c.

July 13—Federal Reserve Board announces 50 per cent increase on Aug. 15 in member banks' reserve requirements; estimating excess reserves will thereby be reduced from \$3,400,000,000 to \$1,900,000,000. Rains in West; wheat falls 3½c to \$1.01; corn 1½c to 82¾c.

July 14—Grain prices decline further; stock averages rise to new high for year. Steel output down from 70 to 69 per cent.

July 16—Bank of France gains \$17,500,000 gold for week.

July 17—Corn rises to 93c; high mark thus far in season.

July 21—Stock averages rise 2 points to new high level.

July 22—Decline in stocks.

July 23—Landon makes at Topeka acceptance speech of Republican nomination. Bank of France gains 80,000,000 francs gold for week. Steel output rises from 69 per cent to 71, against 43½ year before, 27½ two years before.

July 25—United States Steel Corporation increases preferred stock quarterly dividend from 2 per cent annually to 4. Reports June quarter's surplus net earnings as \$12,862,000, against deficit of \$762,000 in 1925 and \$20,452,000 in 1932.

July 29—Secretary Wallace predicts smaller corn crop than in 1934. Corn rises 3c, wheat 2½. Steel output up from 71 per cent to 71½, highest of year to date; compares with 46 per cent 1935 and 26 per cent 1934.

July 30—Wheat rises to \$1.10½, corn

to 98c; both highest of season.

French Bank gains \$9,500,000 gold.

July 31—September wheat touches \$1.13⅞, corn \$1.02.

AUGUST

Aug. 3—Wheat rises to \$1.14⅞, corn to \$1.09¼.

Aug. 4—Break in wheat to \$1.09½, in corn to \$1.05½. Private expert estimates on corn yield range from 1,490,000,000 bushels to \$1,705,000,000, against government's July estimate of 2,245,000,000.

Aug. 5—Wheat recovers 3¼ cents, corn 2¼. Steel output rises from 71½ per cent to 72, year's highest.

Aug. 6—French bank's gold reserve up \$7,260,000 for week.

Aug. 8—\$7,000,000 gold engaged for import from France.

Aug. 10—Wheat declines 1¾ cents, corn 1⅞, awaiting government crop report, which is published after market's closing. Corn estimate lowered from July figure 805,799,000 bushels, placing forecast 168,000,000 bushels below August estimate of 1934 but 49,000,000 above final 1934 corn crop.

Aug. 11—Responding to overnight crop estimate, corn rises 1¾ cents, declines 2½, recovers ⅞. Wheat declines 2¼c.

Aug. 12—Wheat rises 2⅜ cents, corn 2⅞. Stocks strong. Steel output down from 72 per cent to 71. Iron Age, however, predicts no important let-down, even in September.

Aug. 13—Sharp reaction in stocks. Wheat rises 2 cents further, corn 2⅞; other grains 1@2½ cents. Bank of France gains \$3,100,000 gold for week, but \$1,660,000 is engaged at Paris for New York.

Aug. 14—Largest reaction in stock market averages since May. Wheat declines 1⅞ cents, corn 1⅞. \$2,300,000 more gold engaged from Paris.

Aug. 15—Fifty per cent increase of member bank reserve requirements goes into effect. Board estimates excess reserves will remain at 35@40 per cent.

Aug. 18—Corn's price at Chicago, September delivery, rises to \$1.16; wheat to \$1.14; corn passing wheat

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for first time since 1930. Cash corn in sample market at \$1.32½, highest since February, 1925. Stock market steady.

Aug. 19—Steel output up from 71 per cent to 72½, new high level for 1936. Structural mills reported working at capacity. September corn touches \$1.19¾, wheat \$1.16¾, highest of movement; with later decline of 2-cent wheat and 3-cent corn. London price gold in sterling falls to lowest since Aug. 16, 1934. Gold engagements, \$3,400,000 France, \$389,000 England.

Aug. 20—French bank loses \$9,300,000 gold exported to United States.

Aug. 21—Stocks break sharply.

Aug. 24—Recovery in stocks. Wheat declines 2¼ cents on news of rain, corn 1¾ cents.

Aug. 27—Steel production at new high level of 73. Stocks advance.

Aug. 28—Violent break in grain; wheat down 3¾ cents to \$1.08½, corn 4¾ cents to \$1.06½.

Aug. 31—New York City places \$6,000,000 three-month loan at lowest recorded interest rate, 0.2416 per cent.

SEPTEMBER

Sept. 2—Steel output decreased from 73 per cent to 72.

Sept. 3—Drought becomes subject of political manoeuvre. Conference staged at Des Moines for "drought conference" among President Roosevelt, Governor Landon and other Western Governors. Average private expert estimates corn yield 1,416,000,000 bushels—156,000,000 below their August average but only 23,000,000 under government's August estimate. September private estimates in drought year 1934 averaged 1,459,000,000 or 148,000,000 bushels below government's August estimate and 69,000,000 under its subsequent September forecast.

Sept. 8—Stocks rise sharply in first market after Labor Day, on largest business in six weeks.

Sept. 9—\$8,300,000 gold engaged at Paris for New York.

Sept. 10—Steel output down from 72 per cent to 70; decrease ascribed

to Labor Day suspension of work. French bank reports loss of \$21,600,000 gold in week. Government crop report shows a slight improvement in corn estimate over August.

Sept. 11—Corn's price declines 1 cent, then rises 2½.

Sept. 12—Wheat 1 cent higher, at \$1.13½, against season's highest, \$1.16¾. Corn 1½ cents higher at \$1.12½; season's highest, \$1.19¾. Week's gold engagements from Paris, \$41,672,000.

Sept. 15—News of Republican victory in Maine followed by confused market and moderate decline in averages.

Sept. 16—Steel output 72 per cent, against 70 preceding week.

Sept. 23—Steel output rises to 73½ per cent, highest of year to date.

Sept. 24—French bank reports loss of \$170,000,000 gold in week.

Sept. 25—Governments United States, Great Britain, France make preliminary announcement of agreement for cooperative stabilization of dollar, pound sterling and franc.

Sept. 26—Franc's value on exchange declines from 6.58¾ cents to 5 cents nominal.

Sept. 28—Dutch Government announces temporary suspension of gold payments.

Sept. 29—French Chamber of Deputies, after twenty-five-hour session, votes devaluation of franc from 65½ milligrams to between 49 and 43 milligrams, conditional on monetary agreements among France, England and United States.

Sept. 30—Swiss Government announces devaluation of currency between 26 and 34 per cent. Italian stock exchanges closed. New York stock market declines. Steel output goes to 75 per cent, highest since Spring of 1930.

OCTOBER

Oct. 2—Sharp rise in stocks. Franc declines to 4.66 cents. French bank rate lowered from 5 per cent to 3.

Oct. 5—Stock market averages pass year's previous high mark.

Oct. 6—President informs "press conference" that, on approaching ex-

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piration of currency devaluation authority, he will ask Congress for authority in his own discretion to devalue dollar further.

Oct. 7—Stock averages go to highest since July 7, 1931. Steel output rises to 75½ per cent, highest of year.

Oct. 8—Bank of France lowers discount rate from 3 per cent to 2½. Bank's weekly statement reports gain of 7,247,000,000 francs gold through devaluation.

Oct. 12—Tripartite agreement United States, Great Britain, France, on gold shipments; to be conducted through equalization funds. Agreement terminable on twenty-four hours' notice. Other governments to be admitted on similar reciprocal arrangements, and if equalization funds used.

Oct. 13—Stock averages reach highest of year to date; increase since 1935 was 26⅝ points.

Oct. 14—Steel output down from 75½ to 75 per cent.

Oct. 15—French Bank reduces rate from 2½ per cent to 2 per cent, reports gain for week of 5,000,000 francs.

Oct. 19—Amsterdam bank rate reduced to 2½ per cent from 3, effective since July 7.

Oct. 21—Steel output declines to 74.

Oct. 27—United States Steel Corporation declares 3¾ per cent dividend on its preferred stock, covering regular quarterly dividend at regular 7 per cent annual rate, plus 2 per cent, applied to reduction from 18¼ per cent to 16¼ of accumulated arrears on failure, since 1932, to pay the 7 per cent annual dividend.

Oct. 28—Steel output unchanged at 74 per cent for entire country, but Pittsburgh rate falls from 72 per cent to 70.

Oct. 29—French Bank reported gain of 2,000,000 francs.

NOVEMBER

Nov. 2—Day before election; stock market firm. Election betting less in evidence than usual, but odds of 3 to 1 are offered on Roosevelt.

Nov. 3—Presidential election. Roose-

velt carries all States except Maine and Vermont. Electoral vote 523, against 8 for Landon; popular plurality 11,000,000, breaking all precedent. Democratic party gains fourteen seats in House of Representatives, Republicans lose sixteen.

Nov. 4—Stock market averages rise 1¾ points on trading of 3,294,000 shares, largest since Feb. 20. Numerous advances of 2 to 5 points in industrial shares. Averages go to highest of year. Steel output up one-half of 1 per cent to 74½.

Nov. 5—Stock averages rise 2⅛ points on sales of 3,620,000 shares, largest for year to date except 4,579,000 of Feb. 19 and 4,718,000 of Feb. 17.

Nov. 10—Stock market averages rise to highest since June 27, 1931.

Nov. 11—Steel output unchanged at 74½.

Nov. 14—Reaction in stocks canceled most of after-election gain.

Nov. 17—Sharp advance stocks on numerous extra or increased dividend declarations. Day's business 3,270,000 shares.

Nov. 18—Steel output down from 74½ to 74 per cent. Pittsburgh lower, Youngstown higher.

Nov. 24—U. S. Steel declares 7 per cent more on its preferred stock, covering arrearages. This, with previous month's declaration of \$2 on same stock, reduces arrearages under cumulative 7 per cent annual since 1932 from 18¼ per cent to 9½ per cent.

Nov. 25—Swiss bank rate reduced to 1½ per cent, lowest in bank's history and lowest ever reached by a European central bank. Steel production up ½ to 74½.

DECEMBER

Dec. 2—Steel production up from 74½ per cent to 76, highest of year to date. Iron Age says orders, due to advance in steel prices as of Dec. 1, had "created conditions that have seldom been seen in the steel industry except in such unusual years as 1920 and 1929."

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- Dec. 9—Steel output 76½ per cent of capacity, highest of year to date.
- Dec. 10—Bank of England's note circulation exceeds highest previous figure.
- Dec. 14—Wheat prices at Chicago reach highest point in seven years, on extremely heavy buying, based on cables that German requirements, previously estimated at 4,000,000 bushels, would reach 36,500,000. December wheat rose 7½ cents to \$1.36¼; cash wheat \$1.34 @ \$1.38. Corn up ¾ cents, oats 2¾.
- Dec. 15—Bank of England announces purchase of £65,000,000 gold, to shift £60,000,000 of its bank notes from the "fiduciary" class to the note-issue secured up to face value by gold.
- Dec. 16—Steel production up from 76½ to 79 per cent of capacity; highest Iron Age rating since February, 1930, but probably underestimate, because Iron and Steel Institute's full report for November gave average as 79.05 per cent, against Iron Age weekly average of about 75.
- Dec. 17—Bank of England's statement, reporting £65,025,000 increase for the week in gold, also reports £8,843,000 increase in total circulation, to the highest figure in the institution's history.
- Dec. 21—Treasury announces, in view of mounting bank surplus, that imported gold will hereafter be purchased in and retained by Treasury, requisite funds being borrowed by government for the purpose. Avowed object is to "sterilize" future gold imports, but to draw on Treasury accumulations in case of gold exports.
- Dec. 22—Wheat declines 4 cents on government's estimate of high-record Winter-sown acreage.
- Dec. 23—Steel output down from 79 per cent to 78; decline ascribed to Christmas week relaxation.
- Dec. 26—Wheat rises rapidly; day's best price 7 cents above week's lowest, reaching high mark of the year.
- Dec. 30—Steel production recovers to 79½ per cent, high mark of 1936.
- Dec. 31—Stock Exchange celebrates New Year's Eve from 1:30 to 3 P. M.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ECONOMICS

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| <p>ACCOUNTANTS ASSN. OF N. Y., 1776 Broadway, New York City.</p> <p>AMERICAN ECONOMIC ASSOCIATION, Northwestern University, Evanston, Ill.</p> <p>AMERICAN FAIR TRADE ASSN., 71 W. 23rd Street, New York City.</p> <p>AMERICAN HOME ECONOMIC ASSN., Mills Building, Washington, D. C.</p> <p>AMERICAN INSTITUTE OF ACCOUNTANTS, 135 Cedar Street, New York City.</p> <p>AMERICAN INSTITUTE OF WEIGHTS AND MEASURES, 33 Rector Street, New York City.</p> <p>AMERICAN RETAILERS', INC., 128 W. 31st Street, New York City.</p> <p>AMERICAN SOCIETY OF CERTIFIED PUB-</p> | <p>LIC ACCOUNTANTS, National Press Building, Washington, D. C.</p> <p>AMERICAN STATISTICAL ASSN., INC., 722 Woodward Building, 15th and H Streets, N. W., Washington, D. C.</p> <p>CHAMBER OF COMMERCE OF THE UNITED STATES, 1615 H Street N. W., Washington, D. C.</p> <p>CONSUMERS' LEAGUE OF NEW YORK, 112 East 19th St., New York City.</p> <p>COOPERATIVE LEAGUE OF U. S. A., 167 W. 12th Street, New York City.</p> <p>FRENCH CHAMBER OF COMMERCE, 647 Fifth Ave., New York City.</p> <p>GENERAL SOCIETY OF MECHANICS & TRADESMEN OF NEW YORK CITY, 18 W. 44th Street, New York City.</p> <p>HOME MARKET CLUB, 38 Chauncey Street, Boston, Mass.</p> |
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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

INSTITUTE OF ECONOMICS, 722 Jackson Place, Washington, D. C.
 INTERNATIONAL ACCOUNTANTS' SOCIETY, 3411 S. Michigan Ave., Chicago.
 ITALIAN CHAMBER OF COMMERCE IN NEW YORK, 99 Hudson Street, New York City.
 LEAGUE FOR INDUSTRIAL RIGHTS, 40 Wall Street, New York City.
 MELLON INSTITUTE OF INDUSTRIAL RESEARCH, University of Pittsburgh, Pittsburgh, Pa.
 NATIONAL ASSN. OF COST ACCOUNTANTS, 385 Madison Ave., New York City.
 NATIONAL ASSN. OF CREDIT MEN, 1 Park Ave., New York City.
 NATIONAL ASSN. OF REAL ESTATE BOARDS, 59 E. Van Buren St., Chicago, Ill.
 NATIONAL BUREAU OF ECONOMIC RESEARCH, INC., 1819 Broadway, New York City.
 NATIONAL CONSUMERS' LEAGUE, 156 Fifth Ave., New York City.
 NATIONAL ECONOMIC LEAGUE, 6 Beacon Street, Boston, Mass.
 NATIONAL ECONOMY LEAGUE, 280 Madison Ave., New York City.
 NATIONAL FOREIGN TRADE COUNCIL, 26 Beaver St., New York City.
 NATIONAL RESEARCH COUNCIL, 29 W. 39th Street, New York City.
 NATIONAL WHOLESALE GROCERS' ASSN. OF THE U.S., 60 Hudson St., New York City.
 NEW YORK STOCK EXCHANGE, 11 Wall Street, New York City.
 ORDER OF UNITED COMMERCIAL TRAVELERS OF AMERICA, 632 N. Park St., Columbus, O.
 PETROLEUM IMPORT & EXPORT CORPORATION, INC., 70 Pine Street, New York City.

BANKING AND CURRENCY
 AMERICAN BANKERS ASSN., 22 E. 40th Street, New York City.
 AMERICAN INSTITUTE OF BANKING, 22 E. 40th Street, New York City.
 INVESTMENT BANKERS ASSN. OF AMERICA, 531 First National Bank Bldg., 33 S. Clark St., Chicago, Ill.
 NATIONAL ASSN. OF MUTUAL SAVINGS BANKS, 60 East 42nd St., New York City.

NATIONAL ASSN. OF SUPERINTENDENTS OF STATE BANKS, Nashville, Tenn.
 NEW YORK CLEARING HOUSE ASSN., 77 Cedar St., New York City.
 UNITED STATES BUILDING AND LOAN LEAGUE, 104 S. Michigan Ave., Chicago, Ill.

INSURANCE

ACTUARIAL SOCIETY OF AMERICA, 393 Seventh Avenue, New York City.
 AMERICAN INSTITUTE OF ACTUARIES, 720 N. Michigan Ave., Chicago, Ill.
 AMERICAN INSTITUTE OF MARINE UNDERWRITERS, 99 John Street, New York City.
 AMERICAN LIFE CONVENTION, Omaha, Neb.
 AMERICAN MARINE INSURANCE SYNDICATES, 99 John Street, New York City.
 ASSOCIATION OF CASUALTY & SURETY EXECUTIVES, 1 Park Ave., New York City.
 ASSOCIATION OF LIFE INSURANCE PRESIDENTS, 165 Broadway, New York City.
 BOARD OF UNDERWRITERS OF NEW YORK, 99 John Street, New York City.
 CASUALTY ACTUARIAL SOCIETY, 90 John Street, New York City.
 NATIONAL ASSN. OF LIFE UNDERWRITERS, 11 W. 42nd Street, New York City.
 NATIONAL ASSN. OF MUTUAL CASUALTY COS., 60 E. 42nd Street, New York City.
 NATIONAL ASSN. OF TRAVELERS' AID AND TRANSIT SERVICE, 1270 Sixth Ave., New York City.
 NATIONAL BOARD OF FIRE UNDERWRITERS, 85 John Street, New York City.
 NATIONAL BUREAU OF CASUALTY & SURETY UNDERWRITERS, 1 Park Ave., New York City.
 NATIONAL COUNCIL OF COMPENSATION INSURANCE, 45 East 17th St., New York City.
 NATIONAL FIRE PROTECTION ASSN., 60 Battery March, Boston, Mass.
 SURETY ASSN. OF AMERICA, 60 John Street, New York City.
 TRAVELERS' AID SOCIETY, INC., 144 East 44th St., New York City.

DIVISION XI

AGRICULTURE AND ALLIED INDUSTRIES

CONDITIONS IN AGRICULTURE

BY HENRY A. WALLACE

SECRETARY OF AGRICULTURE

PROGRESS IN FARM RECOVERY

Farm recovery in the United States continued in 1936 despite the handicap of another widespread drought, and the gross farm income approached \$9,530,000,000 as compared with \$8,508,000,000 in 1935 and \$5,337,000,000 in 1932. As a result of the drought, which reduced crop production to about one-fifth less than the usual output, the distribution of farm income was exceptionally uneven. In some States the supply of corn, hogs, and other farm products for sale was very small. In these States payment received by farmers for participation in the Federal soil conservation program constituted a substantial proportion of their total earnings. Conversely, farmers in States that escaped the drought had the double advantage of good production and good prices. By December, 1936, the index of farm commodity purchasing power had climbed to 99 per cent of the pre-war level; and in the first 11 months of the year each of the principal agricultural regions had more farm income than in the corresponding period of 1935. Particulars as to the distribution of the farm income for the remainder of the year are not yet available.

Net farm income for the country as a whole promised to show proportionately more increase than the gross farm income. This was because farm commodity prices rose more than production expenses and other charges. In this respect the agricultural balance

sheet for 1936 continued the story begun in the preceding three years. Recently revised calculations indicate that the income available to farm operators for their labor, capital, and management from the production of 1935 was \$4,538,000,000 as compared with \$3,467,000,000 in 1934 and \$1,492,000,000 in 1932. These were the sums remaining after allowing for expenditures for raw materials used in production such as feed and fertilizer, the depreciation of buildings and equipment, and after deducting rent, interest, taxes, and the wages of hired labor. The total for 1935 was more than three times as large as that of 1932, and the total for 1936 will undoubtedly show a further increase. During the depression farmers' expenditures for machinery, buildings, and other permanent improvements, were much less than the depreciation of such items, but in 1935 expenditures about equaled the depreciation, and preliminary indications for 1936 are that farmers are again increasing their capital equipment.

FACTORS IN FARM PURCHASING POWER

As already mentioned, the purchasing power of farm commodities rose in 1936 almost to the pre-war level. But the purchasing power of farm commodities should not be confused with the purchasing power of the farmer, which depends upon the volume as well as upon the prices of farm production. What farmers as a

CONDITIONS IN AGRICULTURE

group can buy, as distinguished from what can be bought with a given quantity of farm products, may be estimated from the ratio between cash farm income and the prices that farmers have to pay for sundry goods and services. In 1936 the prices paid by farmers for these things averaged 80 per cent of what they paid in 1929. Their cash income from marketings during the calendar year seemed likely to be approximately \$7,850,000,000. This was equivalent to \$9,800,000,000 in terms of 1929 prices paid by farmers. The actual cash income in 1929 was \$10,479,000,000. In other words, the purchasing power of the cash farm income in 1936 was within 7 per cent of what it was in 1929, and it was 60 per cent more than in 1932. Moreover, debt charges, taxes, and wage costs were lower. Allowance made for this factor also would give an agricultural purchasing power still closer to that of 1929. Accurately to measure the relative influence of the factors responsible for this recovery is impossible. Prominent among these factors have been the revaluation of the dollar, the A. A. A. adjustment programs, the effects of the drought, and the recovery that has taken place in the buying power of consumers.

CROPS AND THE DROUGHT

Next to 1934, the year 1936 was the most disastrous season for crops in the history of the country. In loss of acreage and reduction of yields these two seasons have no parallel in records that go back to the early 1860's. Both years brought great droughts which were particularly severe in the area stretching from North Dakota and eastern Montana to north-central Texas, and extending eastward over Missouri, southwestern Illinois, southern and western Iowa, and west-central Minnesota. North-eastern Wyoming, parts of eastern Colorado, northeastern New Mexico and northwestern Arkansas also suffered severely in both years. The production of wheat, corn, oats, barley, rye, and grain sorghums, was greatly reduced in both years. In 1936, however, there was no acute

shortage of hay and roughage except in limited areas. Whereas the drought of 1934 reduced crop production to about one-third less than the usual output, the drought of 1936 as already noted reduced it to about one-fifth below the average.

Corn production in 1936, however, was slightly more than in 1934 and with that exception was the smallest corn crop harvested since 1881. The total wheat production of 626,000,000 bushels exceeded that produced in any of the three preceding years, all of which were very unfavorable, but was less than the production of any other year since 1917. Rye production suffered likewise. The production of corn, oats, barley, and grain sorghums was about 60,000,000 tons as compared with 93,000,000 tons in 1935 and 54,000,000 tons in 1934. Hay production, however, was only about 13 per cent below the average, and there was a fair supply of roughage. Rice, sugar beets, and irrigated crops generally gave good yields; so did cotton and peanuts east of the Mississippi River. The drought curtailed dairy production. The tobacco crop was the smallest since 1921 with the exception of the crops of 1932 and 1934. Fruit and vegetable production, excluding potatoes and sweet potatoes, was about 6 per cent less than in 1935, but was 5 per cent above 1934 and 2 per cent above the average for the period 1928-32.

LIVESTOCK PRODUCTION

Recovery had been under way in livestock production following the tremendous liquidation necessitated by the drought of 1934, but the 1936 drought checked it. Probably the number of both grain and hay consuming animal units on farms is nearly as low now as it was in January, 1935. Heavy marketing of both cattle and hogs took place in the fall of 1936, and there was close culling of dairy herds and poultry flocks. Recovery from the present situation, however, should be quicker in the livestock industries than it was following the drought of 1934. Farmers will be better able to winter

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their cattle, sheep, and work stock, and the total feed grain production this year was larger than in 1934. The drought affected the cattle situation less seriously in 1936 than in 1934. This was true also of sheep and lamb production.

FOOD SUPPLIES AND PRICES

From crop data available in September it appears that, for the 1936-37 season, food supplies in general will be about 3 per cent below the 1935-36 level, about 1 per cent below the level in 1934-35, and about 5 per cent below the 1925-29 average. Certain vegetables, particularly potatoes, will be in short supply; and the output of fruits and vegetables and of dairy products will be lower. After the turn of the year the supply of meats will be reduced. Analysis of the trend in non-farm income indicates, however, that consumers' incomes in the first half of 1937 will increase at least as much as the cost of living. Consumers cannot be indifferent to the change produced by the drought in the supply situation; but, with general economic recovery proceeding, the main effect will be to check a gain rather than to cause an actual drop in their real income.

In the comparable situation after the 1934 drought retail food prices as a whole averaged about 11 per cent higher in the first half of 1935 than in the first half of 1934. An increase of, say, 10 per cent in the cost of foods in the first half of 1937 would cause a rise in total living costs of about 3 per cent. Such a relatively small rise will be substantially offset by recovery in urban buying power. Non-farm labor incomes aggregated \$23,492,000,000 in the first half of 1936 as compared with \$19,617,000,000 in the first half of 1933. Employed wage earners in 1936 could buy substantially more of the necessities of life than they could in 1929 since retail prices were lower on the average. Present indications are that their purchasing power will not be diminished in 1937, but on the contrary will probably increase.

MEASURES FOR DROUGHT RELIEF

Various government agencies both Federal and State cooperated in measures for drought relief. The A. A. A. so modified its soil-conservation program as to make allowance for conditions beyond the control of the farmers; issued supplementary provisions to increase the production of feed and forage; encouraged the planting of emergency forage and hay crops; and in general enabled farmers in drought areas to take advantage of the income-insurance features of the program. The Government's readiness to make purchases of livestock from drought areas protected markets against sharp declines. Loans for the purchase and storage of seed enabled farmers to prepare for the next crop. An agency established at Kansas City facilitated the movement of feed into drought-stricken areas and also the movement of livestock from drought areas to localities where surplus feed and pastures were available.

Looking toward the development of a long-term program calculated to render future droughts less disastrous in the Great Plains region, a committee appointed by Executive order visited the region, conferred with farmers and public officials in the areas most seriously affected, and drew up a series of recommendations. The committee utilized the experience of numerous Federal and State agencies, many of which had dealt for many years with the problems of the semi-arid lands. These agencies placed a mass of material at the committee's disposal, and the conclusions reached were in large part the result of studies and experiments begun long ago. In thus bringing to a focus the best available knowledge on the subject the committee accomplished a work of outstanding public importance and laid a foundation for an effective remedial policy.

Analyzing the causes of the present disaster, the committee assigned primary importance to the attempt which has been made for several decades to impose on the Great Plains a system of agriculture not adapted

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to the region. Methods suited on the whole only to a humid region were introduced into a semi-arid region. This was largely the outcome of a mistaken public policy. The Federal homestead law, for example, kept land allotments low and required that a portion of each allotment should be plowed. This policy, the committee said, caused immeasurable harm. On the western Plains it was both a stimulus to overcultivation and a condemnation of the cultivators to poverty.

Primarily, it is necessary to check overcropping and overgrazing, so that both soil and water may be conserved, and this end cannot be attained exclusively by individual action. Yet the committee's proposals do not strike at the independence of the individual farmer. On the contrary, the action recommended should restore an independence that has largely been lost. New public policies, designed to correct the existing mistaken policies, will stabilize the economy of the region and increase its power to maintain independent farm families. The fundamental requirement is to bring farming and livestock-raising methods into conformity with the natural conditions.

Research should be undertaken to determine how many people the region can properly support. With that determined, the problems of migration and relocation would be simplified. While discouraging aimless migration, the committee believes that in some areas a regrouping of the population would be beneficial. It is impossible, as yet, to determine whether or not the region can adequately support its present population. A shift from cropping to grazing might reduce the population in some localities but at the same time increase the real wealth of the region as a whole. Ultimately, the change would provide additional income. The fundamental purpose is not to depopulate the region, but to make it permanently habitable. Any other aim would be a confession of failure. In the long run the Great Plains will support more people on

a higher standard of living if its agriculture is regulated intelligently than it can possibly support if present tendencies run their course.

SOIL CONSERVATION

The invalidation of the processing tax and production control provisions of the Agricultural Adjustment Act led Congress to pass the Soil Conservation and Domestic Allotment Act. Under the A. A. A. the primary objective was production control, with soil conservation a secondary though increasingly important object. Under the new law soil conservation became the primary aim, with some crop adjustments coming as a by-product. Probably in a period of good crops and high yields the degree of crop control attainable under the new measure will not be adequate, but for the time being it works for a better crop balance. The emphasis it puts on grass and legumes has the double advantage of making our agricultural system less intensive, and of conserving soil wealth.

The Federal Government in 1936 made grants to farmers cooperating in soil-conserving and soil-building programs. It did not make use of contracts. Cooperating farmers simply planned their operations in line with definite soil-conservation standards, worked out with producers, soil specialists, and state agricultural leaders. They obtained their grants after officials had checked the performance with the standards. For this purpose Congress made \$470,000,000 available for the year, the goal for which was to have 130,000,000 acres in soil-conserving crops as compared with 100,000,000 acres in 1930. The country was divided for administrative purposes into five regions—northeastern, east central, southern, western, and north central—and the practices for which payments were made and conditions which had to be met were varied so as to meet the particular needs of each region.

FARM PRODUCTS AND FOREIGN TRADE

Farm products participated in the general increase which took place

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during the past fiscal year in all branches of United States foreign trade. This was true both of farm imports and farm exports, in spite of certain distorting influences that tended to enlarge the imports and diminish the exports. Chief of the abnormal forces was the persistent effect of the 1934 drought and a flight of capital into the United States from other countries. General business recovery, together with the influence of the reciprocal trade agreement program, benefited the farm export trade materially.

Exports of United States farm products rose from \$669,000,000 in the fiscal year 1935 to \$767,000,000 in 1936. Imports of farm products (including coffee, rubber, silk, and many other exotic products) rose from \$971,000,000 in 1934-35 to \$1,185,000,000 in 1935-36. As compared with the low points of \$590,000,000 in exports and \$612,000,000 in imports during 1932-33, the increases seem large, but neither the exports nor the imports of farm products were near the levels maintained from 1920 to 1929.

RECIPROCAL TRADE AGREEMENTS

Agriculture is beginning to benefit from the Reciprocal Tariff Act. During the last fiscal year the United States concluded reciprocal trade agreements with nine countries, namely, Columbia, Canada, Honduras, the Netherlands, Switzerland, Nicaragua, Guatemala, France, and Finland. It had entered previously into similar agreements with Cuba, Brazil, Belgium, Haiti, and Sweden. All 14 agreements are in effect except those with Finland and Nicaragua.

It is difficult to measure the results as yet. Most of the agreements have not been long in effect and the period covered by their operation has been one of abnormally low production in the United States. Moreover, the countries with which agreements have been concluded ordinarily take only about a quarter of our total agricultural exports. It will not be possible fully to test the reciprocal trade-agreement program until agree-

ments have been concluded with one or more of the countries that constitute our leading foreign markets, namely, the United Kingdom, Germany, and Japan.

Broadly speaking, there are three types of reciprocal-trade agreements: (1) Bilateral arrangements for the exchange of exclusive concessions with individual countries, (2) arrangements based on conditional most-favored-nation treatment, and (3) arrangements based on unconditional most-favored-nation treatment. The United States has favored the third method, and it may be useful to glance at the reasons.

The strictly bilateral approach is open to the objection that it would reduce our foreign trade. In our trade with most countries we export more than we import. To equalize matters with these nations individually would require a reduction in our exports. This has been the experience of European countries that have tried to achieve bilateral balances of trade. Under our present policy triangular and multiangular trading squares matters. It enables countries that buy more than they sell here to even things up by transactions with other countries which in turn may divert products to the United States.

Under the second approach, the conditional most-favored-nation treatment, reciprocal concessions might be granted to countries that made equivalent concessions to us. But this method, too, tends to decrease the total trade. Few countries other than the parties to an agreement will be equally interested in the same commodities and duty reductions. Most countries will therefore be unwilling to make the equivalent concessions required. Moreover, they will object to discriminatory tariff treatment and may retaliate with higher duties against our goods. The result may be a tariff war and new obstacles to international trade. Even without retaliatory measures discriminatory treatment under the conditional principle may force trade into more restricted channels. Changes in foreign trade affect the domestic markets.

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The third or unconditional most-favored-nation approach has been followed by the United States in all cases except that of Cuba, under the present trade-agreement program. This is the policy required by the Reciprocal Trade Agreements Act, which directs the Government to grant any tariff reductions to all countries except those that discriminate against the commerce of the United States. Under this last restriction Germany and Australia have been denied the benefit of most-favored-nation treatment, but all other countries receive it. The unconditional most-favored-nation treatment, which has been followed by the United States since 1922, has the great advantage of affording a guarantee of no discrimination against us in our foreign markets.

FEDERAL LEGISLATION

Soil Conservation.—Outstanding among the legislative enactments of the second session of the 74th Congress was the act approved Feb. 29, 1936 (Public No. 461) amending the act of April 27, 1935 and giving it the short title, "Soil Conservation and Domestic Allotment Act." Section 7 of the Soil Conservation and Domestic Allotment Act, as amended, sets up the following principal objectives: (1) Preservation and improvement of soil fertility; (2) Promotion of the economic use and conservation of land; (3) Diminution of exploitation and wasteful and unscientific use of national soil resources; (4) The protection of rivers and harbors against the results of soil erosion; (5) Reestablishment of the farmers' buying power to the pre-war (1909-14) level. Powers conferred by the act must be exercised with due regard to the maintenance of a continuous and stable supply of agricultural commodities for domestic requirements.

The measure authorizes the Secretary of Agriculture to cooperate with the States by making grants to enable them to carry out soil conservation programs. It directs him to apportion the funds available among the several States on or before Nov.

1 of each year. In 1936 under express authority the Federal Government disbursed soil conservation payments directly to farmers, and the same plan will be followed in 1937. The program will enter upon the state-aid basis after Jan. 1, 1938. In determining the amount of any payment or grant the Secretary takes into consideration the productivity of the land affected. He has no power to enter into any contracts with producers, but may condition the payments upon compliance with desirable farming practices. Part of the funds appropriated may be used for the expansion of domestic and foreign markets or for seeking new or additional markets. The authorized appropriation for any fiscal year may not exceed \$500,000,000.

Production Control.—Following the invalidation of the production control features of the Agricultural Adjustment Act, Congress passed legislation (Public No. 433, approved Feb. 10, 1936, as amended by Public No. 463, approved March 2, 1936) repealing the Kerr Tobacco Act, the Bankhead Cotton Act of 1934, and the Potato Act of 1935. These measures introduced compulsory principles into the production control programs. Congress extended the Jones-Costigan Sugar Act until Dec. 31, 1937, minus the provisions relating to processing, compensating, and floor-stocks taxes and minus the production control contracts that had been entered into prior to the decision of the United States Supreme Court in the Hoosac Mills case. The measure extending the Jones-Costigan Act (Public Resolution No. 109, approved June 19, 1936) maintained the quota system for the regulation of commerce with Cuba and other foreign sugar producing countries. It stipulated, however, that for 1937 there shall be allotted to the continental United States not less than 30 per cent of any amount of the country's consumption requirements above 6,452,000 short tons raw value.

By an act (Public No. 534) approved April 25, 1936 Congress authorized the negotiation of compacts among States for the regulation of

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tobacco production and commerce. State laws authorizing such compacts must be essentially uniform and may not contemplate price fixing or the creation of monopolies.

Rural Electrification.—Under an act (Public No. 605) approved May 20, 1936 the Rural Electrification Administration came into existence with authority to make loans for rural electrification and the furnishing of electric energy to persons in rural areas who are not receiving central station service. This act directs the Reconstruction Finance Corporation to make loans to the Rural Electrification Administration, on approval by the President, in amounts aggregating not more than \$50,000,000 for the fiscal year 1937 and authorizes an appropriation of \$40,000,000 for the fiscal year 1938 and for each of the eight years thereafter. The R. E. A. may make loans: (1) to finance the construction and operation of generating plants and transmission and distribution lines; and (2) to finance the wiring of premises in rural areas and the acquisition and installation of electric and plumbing appliances and equipment.

Grain Futures Act Extension.—By an amendment to the Grain Futures Act (Public No. 675, approved June 15, 1936) Congress extended the legislation to cover cotton, rice, mill feeds, butter, eggs, and Irish potatoes, and changed its short title to the Commodity Exchange Act. Other changes included the following provisions: Commission merchants and brokers must register with the Department of Agriculture and keep records open to official inspection; by-laws and regulations adopted by contract markets must be filed with the Secretary of Agriculture, and their books and records

made available for inspection; warehouse operators must keep records for official inspection; no contract market may forbid the payment of patronage dividends by cooperative associations to their bona fide members; commission merchants must treat and deal with all margin moneys including securities and property as belonging to their customers; and the Commodity Exchange Commission has discretion to fix limits for speculative trading.

Flood Control.—The Flood Control Act of 1936 (Public No. 738, approved June 22, 1936) recognizes the importance of land-use methods in flood control. Floods are erosion phenomena and they waste soil as well as water. The law provides that Federal investigation of water sheds, measures for run-off and water-flow regulation, and measures for the prevention of soil erosion on water sheds shall be instituted by the Department of Agriculture. Studies and projects relating to the improvement of rivers and other waterways for flood control are the responsibility of the War Department. In other words, the act emphasizes the complexity of the flood problem and points to the necessity for an approach to it from an agricultural as well as from an engineering standpoint.

Grazing Lands.—An important amendment to the Taylor Grazing Act (Public No. 827, approved June 26, 1936) increases the total area of grazing districts to be established under that measure from 80,000,000 to 142,000,000 acres. Moreover, the amendment provides a more practical method of classifying grazing lands, and makes available for private entry lands which are more valuable for purposes other than grazing.

COTTON AND GRAIN CROPS

COTTON AND GRAIN CROPS

BY JOSEPH A. BECKER

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COTTON CROP CONDITIONS

A United States cotton crop of 12,407,000 bales of 500 pounds gross weight was estimated for 1936 on Dec. 8. This compares with 10,638,000 bales in 1935, 9,636,000 bales in 1934, and it is about one seventh less than average.* The planted acreage was still below the average by about one fourth as the result of participation by the majority of farmers in the soil conservation program. The reduction in acreage was partly offset by high yields per acre in all sections of the Belt except Oklahoma and Texas. The crop suffered from two separate dry spells, but nevertheless made a very satisfactory yield except in the States mentioned. Cotton seed production in 1936 was estimated at 5,513,000 tons compared with 4,729,000 tons in 1935, and 6,521,000 tons, the five-year average.

The first of the droughts occurred in May and June and affected particularly the cotton crop in the Carolinas and Georgia. This drought retarded the germination of the cotton seed which had been planted, and as a result a considerable portion of the crop in that area did not come up until late in June or early July. Subsequent favorable weather enabled the crop partly to overcome this late start, but throughout the entire season the cotton in the Atlantic Coast States was in serious danger of being curtailed by early frost, and was faced with the probability of some curtailment even with frost coming at the usual time. Frost did not actually arrive, however, until ten days to two weeks later than usual, with the result that the crop was enabled to reach maturity in spite of the unfavorable start. The favorable summer and fall resulted in an increase in the probable outturn

in the Carolinas, Georgia and Alabama of 600,000 bales between August 1 and December 1.

In the western part of the Belt, particularly in Texas and Oklahoma, the drought came later in the season. Although Texas had favorable prospects on Aug. 1, extreme drought resulted in an estimated loss of over 800,000 bales during the month of August. During the same month the prospective crop in Oklahoma was also reduced over 200,000 bales. The effects of this drought were likewise felt throughout Arkansas, Louisiana, Tennessee, Missouri, and Mississippi, although in this group of States the damage was worst in Arkansas. On Sept. 1 the outlook was very critical throughout all this area, but early in September the drought was broken. The rains came too late to bring back the crop in Texas and Oklahoma, but came in time to save the crop in the States along the Mississippi River where weather conditions were unusually favorable during the remainder of the summer and fall, with the result that the outturn in these States promised to be about 360,000 bales higher than appeared likely on Aug. 1.

One other factor which had a marked effect on the crop outturn was that the droughts reduced boll weevil damage to a minimum and many late cotton bolls which ordinarily would have been ruined by weevils actually matured and made cotton. This lack of weevil damage, together with relatively late frost date, permitted the crop generally to reach full maturity and to be harvested with a minimum of loss.

The net result of this combination of factors has been that, although prospects in Texas and Oklahoma declined approximately 1,080,000 bales after Aug. 1, this loss has been about balanced by improvement in the central and eastern portions of the Belt.

* Average acreage and production, when mentioned, relate to the five years, 1928-1932, inclusive; average yield per acre to the ten years, 1923-1932, inclusive.

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LINT COTTON PRODUCTION

The production of lint cotton in Texas in 1936 was 2,945,000 bales in comparison with 2,956,000 bales in 1935, and an average production of 4,580,000 bales. Mississippi ranked next with 1,910,000 compared with 1,259,000 in 1935 and an average of 1,559,000 bales. Arkansas in 1936 produced 1,295,000 bales compared with 853,000 bales in 1935, and an average of 1,352,000. Alabama produced 1,140,000 bales in 1936 and 1,059,000 in 1935 compared with an average of 1,255,000 bales. Georgia produced 1,090,000 bales in 1936 compared with 1,059,000 in 1935, and an average of 1,241,000 bales. South Carolina produced 820,000 bales in 1936 compared with 744,000 bales in 1935, and an average of 856,000 bales. Louisiana, 763,000 bales in 1936 compared with 556,000 bales in 1935, and an average of 745,000 bales. North Carolina, 612,000 bales in 1936, compared with 572,000 bales in 1935, and an average of 752,000 bales. California produced 440,000 bales in 1936 compared with 239,000 bales in 1935, and an average of 200,000 bales. Tennessee, 431,000 bales in 1936, compared with 317,000 bales in 1935, and an average of 479,000 bales. Missouri, 310,000 bales in 1936, compared with 177,000 bales in 1935, and an average of 228,000 bales. Oklahoma, 290,000 bales in 1936, compared with 567,000 bales in 1935, and an average of 1,109,000 bales.

The United States yield per acre of lint cotton for the 1936 crop was estimated at 197.6 pounds compared with the yield of 186.3 pounds in 1935, 171.6 pounds in 1934, and the average of 169.9 pounds. All States made unusually high yields with the exception of Texas and Oklahoma where the yields were less than average; the yields of these mentioned States were 119 and 60 pounds respectively. Oklahoma made the lowest yield on record with the exception of the 58-pound yield made in 1934. Mississippi, Alabama, and California made the highest yields on record; the yields of these States were 309, 234, and 572 pounds respectively. Arkansas' yield of 242 pounds is the

highest since 1908 with the exception of the 276-pound yield made in 1931. The 265-pound yield produced in Louisiana is the highest since 1906 when 289 pounds were produced. Missouri made the highest yield on record with the exception of the 1931 yield of 392 pounds. The estimated 1936 yields and average yield respectively of the other major States are as follows: North Carolina 305 and 269 pounds, South Carolina 279 and 208 pounds, Georgia 228 and 176 pounds and Tennessee 255 and 197 pounds.

COTTON ACREAGE

The 1936 acreage of cotton harvested in the United States was estimated on Dec. 8 to be 30,054,000 acres, which is about 9.9 per cent more than the 27,335,000 acres harvested in 1935, but 25.9 per cent less than the average acreage for the 5-year period. This acreage compares with 26,866,000 acres in 1934, 29,383,000 acres in 1933, and the average of 40,541,000 acres.

Increases were shown in all States except Florida and Oklahoma. The greatest expansion in acreage occurred west of the Mississippi river, with Texas showing an increase of 11 per cent over last year. The increase in Arkansas was 20 per cent. Most States east of the Mississippi river showed moderate increases, but the expansion of acreage in this area was not so marked as in the Central and Western States. The increases east of the River ranged from 2 per cent to 6 per cent with the exception of Mississippi and Tennessee which showed 12 per cent and 10 per cent respectively. The greatest proportional increases over last season were in the irrigated areas of the far West, New Mexico and Arizona showing an increase of 30 per cent, and California 69 per cent above last year's acreage.

Abandonment of acreage in 1936 was larger than average due principally to the drought; however, it was less than in 1934. The abandonment in 1936 was 2.8 per cent compared with 2 per cent in 1935, 3.6 per cent in 1934, and 2.6 per cent for the ten-year average. The greatest abandonment in 1936 occurred in

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Texas and Oklahoma where it was 3.7 per cent and 11 per cent respectively.

VALUE OF COTTON PRODUCTION

The total value of lint and seed from the 1936 crop based on prices paid to producers up to Dec. 1, 1936 was \$955,581,000 compared with \$737,619,000 for the crop of 1935. The 1935 price of lint cotton represents the local price on the 15th of each month from August, 1935 to July, 1936, weighted by the quantity sold during each month. The 1936 value stated above does not include the Government Soil Conservation payment which will amount to approximately \$121,000,000. Likewise, the 1935 value does not include the rental and benefit payments of \$124,349,000, and price adjustment payments of \$39,109,000 made in connection with the Agricultural Adjustment program. Of the 1936 value shown, \$760,386,000 was accounted for by lint and \$195,195,000 by seed. In the 1935 value the lint was accountable for \$590,136,000 and seed \$147,483,000. The price of cotton lint for the 1936 crop (to Dec. 1) was 12.30 cents per pound compared with 11.09 cents in 1935. The cottonseed price per ton in 1936 was \$35.41 and in 1935 \$31.19.

GRAIN CROPS

The year 1936 was nearly a repetition of the disastrous 1934 season in so far as grain crops were concerned. The rice crop, grown under irrigation, was well above average,* but every other grain crop approached a record low for modern times. The production of wheat was practically the same as in 1935 but 27 per cent below average. The corn crop was the smallest since 1881, except for 1934 and was 40 per cent below recent averages. The oats crop was one-third below average while barley was off nearly one-half. Rye was an exceptionally short crop and buckwheat was the smallest on record. The production of grain crops used

primarily for human food—wheat, rye, buckwheat, and rice combined—was 705,066,000 bushels in 1936, 26 per cent below the average of 952,879,000 bushels.

WHEAT

The 1936 wheat crop of 626,461,000 bushels was somewhat above the quantity utilized in recent years for domestic consumption as flour and for seeding the new crop, but supplies of hard red spring and durum wheat are again below normal milling needs. The shortage in these classes will be partially taken care of by the excess of hard red winter wheat over average requirements and by a greater use of soft red and white wheat in bread flour but some imports of both hard red and durum wheat will be necessary again this year. Taking into consideration the probable amount of wheat which will be fed to poultry and other livestock and exported either as wheat or flour, it seems likely that the carry-over at the end of the current crop year will be one of the smallest of recent years.

The acreage of wheat sown for the 1936 crop was 73,600,000 acres compared with 69,210,000 acres sown for the 1935 crop. With the exception of 1919, the acreage sown for this year's crop was the largest in history. The acreage harvested, however, amounted to only 48,820,000 acres compared with 51,229,000 acres harvested in 1935 and the average of 60,115,000 acres. In the great wheat producing area of the Great Plains, drought conditions caused unusually heavy abandonment of both winter and spring wheat acreage.

Because of higher prices, the farm value of the 1936 wheat crop was larger than that of the 1935 crop by about \$103,000,000. The estimated average price for the 1936 crop was 99.7 cents per bushel, making the total value of the crop \$624,338,000; in 1935 at the farm price of 83.2 cents per bushel, the crop was valued at \$521,233,000. Both the price per bushel and the total value are the highest since 1929.

* Average acreage and production, when mentioned, relate to the five years, 1928-1932 inclusive; average yield to the ten years, 1923-32 inclusive.

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WINTER WHEAT

The winter wheat crop of 519,013,000 bushels was 12 per cent larger than the crop of 465,319,000 bushels produced in 1935 but 17 per cent less than the average production of 622,252,000 bushels. Dry conditions prevailing since seeding time, combined with unseasonably high temperatures in the spring and early summer, caused considerable loss of sown acreage and reduced yields on the remaining acreage in the great plains States. In the Southern States, spring drought reduced yields below average. In the remainder of the country, the crop was largely made ahead of the adverse summer conditions and yields were mostly average or better. The acreage of winter wheat sown in the fall of 1935 was 49,688,000 acres, compared with the average of 45,265,000 acres. This was the largest acreage of winter wheat of record except that sown in the fall of 1918 which amounted to 51,391,000 acres. Of the acreage seeded in the fall of 1935, 24.3 per cent was subsequently abandoned. The percentage abandoned this year was less than in some recent years but nearly double the 10-year average of 12.6 per cent. The estimated yield per acre of winter wheat in 1936 on the acreage harvested was 13.8 bushels compared with 13.9 bushels in 1935. The average yield per harvested acre is 15.2 bushels.

SPRING WHEAT

The 1936 crop of all spring wheat of 107,448,000 bushels is only about two-thirds as large as the 1935 crop of 161,025,000 bushels and less than half as large as the average of 241,312,000 bushels. The only recent year in which production was comparable was 1934, when the crop amounted to only 88,430,000 bushels. The acreage harvested in 1936 was 11,212,000 compared with 17,827,000 acres in 1935 and the average of 20,414,000. The seeded acreage of all spring wheat was 23,912,000 acres compared with 22,143,000 acres in 1935. The 1936 acreage was exceeded only in 1933 when 24,040,000 acres

were sown. Over half of the acreage sown in 1936 was abandoned.

In the principal spring wheat area unfavorable moisture conditions at seeding time were followed by below normal precipitation and excessive temperatures throughout much of the growing season. The consequent damage to the crop has rarely, if ever, been exceeded. Conditions were worst in South Dakota and production in that State was about equal to the amount of seed used.

The production of durum wheat was 8,227,000 bushels, only about a third of the 1935 production of 23,821,000 bushels and only about 15 per cent of the average of 54,020,000 bushels. The acreage of durum wheat harvested was 1,559,000 acres compared with 2,262,000 acres in 1935 and the average of 4,805,000 acres. The acreage seeded in 1936 was 3,592,000 acres compared with 2,461,000 acres in 1935. The durum acreage is concentrated in the principal spring wheat area where drought conditions were the worst in 1936, so that this crop suffered relatively greater damage than other spring wheat. The yield per harvested acre of 5.3 bushels was about half the 1935 yield of 10.5 bushels and about 45 per cent of the average of 11.7 bushels.

The production of spring wheat other than durum was 99,221,000 bushels, compared with 137,204,000 bushels in 1935 and the average of 187,292,000 bushels. The area harvested was 9,653,000 acres, compared with 15,565,000 acres in 1935 and the average of 15,610,000 acres. Over half of the 20,320,000 acres seeded in 1936 was abandoned. The yield per harvested acre was 10.3 bushels, somewhat above the yield of 8.8 bushels secured in 1935 but materially below the average of 12.6 bushels.

RYE

The 1936 production of rye at 25,554,000 bushels was only 44 per cent of the 1935 production of 58,597,000 bushels and about two-thirds as great as the average of 38,212,000 bushels. In the important rye-producing area, comprising Minnesota and the Dakotas, loss of acreage was heavy be-

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cause of winter killing, and dry weather during May and June brought about reduced yields on the remaining acreage. The acreage harvested in 1936 was 2,757,000 acres, compared with 4,141,000 acres in 1935 and the average of 3,315,000 acres. Although the harvested acreage was low, the acreage of rye seeded for all purposes in the fall of 1935 was 6,547,000 acres, an increase of nearly 4 per cent over the acreage sown in the preceding fall. This is the largest acreage sown in any recent year. The yield per harvested acre was 9.3 bushels, about a third less than the 1935 yield of 14.2 bushels and about a fourth less than the average of 12.0 bushels.

Because of prices about twice as high as last year, the farm value of the 1936 rye crop was only 11 per cent less than that of the 1935 crop. The 1936 crop is valued at \$20,572,000 based on an average price of 80.5 cents per bushel, while the 1935 crop was valued at \$23,171,000 with an average price of 39.5 cents per bushel.

BUCKWHEAT

The production of buckwheat of 6,218,000 bushels in 1936 was 25 per cent below the 1935 production of 8,332,000 bushels and also 25 per cent below the average production of 8,277,000 bushels. The year's production was the smallest of record. The acreage harvested was also the smallest of record, amounting to only 370,000 acres, compared with 503,000 acres harvested in 1935 and the average of 568,000 acres. Seedings were reduced and delayed by unfavorable weather conditions but conditions were generally favorable for the development of the late-sown portion of the crop. The yield per harvested acre was 16.8 bushels, which is slightly above the 1935 yield of 16.6 bushels and 1.1 bushels more than the average yield of 15.7 bushels. Higher prices for this year's crop more than offset the smaller production, so far as total value is concerned. The 1936 crop is valued at \$4,939,000 with a farm price of 79.4 cents per bushel, while the 1935 crop, with a price of 55 cents, was valued at \$4,583,000.

RICE

The 1936 rice crop of 46,833,000 bushels (45 pounds rough) was the largest rice crop produced in the United States in the last 16 years. It was 21 per cent greater than the 1935 crop of 38,784,000 bushels and 9 per cent greater than the average production of 42,826,000 bushels. The yield per acre in 1936 of 50.1 bushels was well above the 47.5 bushels obtained in 1935 and far above the average of 43.1 bushels. The acreage harvested in 1936 was 935,000 acres, an increase of 15 per cent over the 1935 acreage of 816,000 and about the same as the average of 927,000. Weather was generally favorable during the harvest period in Arkansas and California but excessive and continuous rains in the rice areas of Louisiana and Texas during September delayed threshing and lowered the quality of rice in the shock.

The farm price of rice increased from 77.1 cents per bushel for the 1935 crop to 87.0 cents per bushel for the 1936 crop. The 1936 crop was valued at \$40,730,000 compared with \$29,898,000 for the 1935 crop. The value of the 1936 crop has not been exceeded since 1926.

FEED CROPS

The combined production of the four farm feed crops—corn, oats, barley and grain sorghums—in 1936, expressed in tons to allow for different weights per bushel, totalled only 60,405,000 tons. Production of the crop in 1935 amounted to 93,042,000 tons and the average was 100,424,000 tons. However, feed supplies are not as short as in 1934 when production of these crops totalled only 53,988,000 tons. Since the greater part of the production of these crops is fed on farms, with only a relatively small quantity moving into commercial channels, farmers' incomes from these crops comes largely from the livestock to which they are fed. The shortage of feed in 1936 has already been reflected in a checking of the upward trend in livestock numbers which was in progress early in the year.

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CORN

The 1936 corn crop of 1,524,317,000 bushels was 34 per cent smaller than the short crop of 2,296,669,000 bushels produced in 1935 and 40 per cent less than the average production of 2,553,424,000 bushels. With the exception of 1934, when the crop amounted to only 1,478,027,000 bushels, the 1936 crop was the smallest in 55 years. These estimates include the grain equivalent of corn used for silage, forage, hogging off and pasturing, in addition to grain corn husked or picked. The total acreage of corn harvested for all purposes in 1936 was placed at 92,495,000 acres, compared with 95,441,000 acres harvested in 1935 and the average of 103,341,000 acres. It is estimated that 100,220,000 acres were planted in 1936, compared with 98,009,000 acres planted in 1935. As in 1934, an unusually large proportion of the planted acreage was abandoned, especially in the central and northern Great Plains area. The yield per harvested acre was 16.5 bushels in 1936 compared with 24.1 bushels in 1935 and the average of 25.4 bushels. While yields were below average in nearly all regions, the greatest reductions occurred in the Western Corn Belt where the 1936 season was one of the most unfavorable ever experienced. Because of the short crop, many farmers harvested low yielding fields of grain corn, but an unusually large proportion of the crop was utilized for silage, forage and grazing, in an effort to salvage the maximum feeding value from the crop.

The amount of corn harvested as grain in 1936 was 1,258,126,000 bushels compared with 2,005,482,000 bushels in 1935 and the average of 2,190,656,000 bushels. In 1934, the most nearly comparable recent year, only 1,146,684,000 bushels were harvested as grain. Corn was harvested for grain from 66,995,000 acres this year. The average acreage of corn harvested for grain was 88,472,000 acres and the 1934 acreage was 61,245,000 acres. The acreage of corn harvested for silage in 1936 was 8,453,000 acres. This is the largest acreage of corn utilized as silage during the 17-year period

for which estimates are available. Even with this large acreage, the production of silage of 33,456,000 tons was slightly less than the 34,012,000 tons produced in 1935. The average production was 30,899,000 tons. Many Corn Belt farmers having silos used a larger than usual acreage of corn for silage this year because of the low yields. Moreover large numbers of growers who did not have permanent silos made use of emergency silos this year in order to utilize the feed value of the damaged corn to utmost advantage. The acreage utilized for hogging, grazing and forage was 17,047,000 acres, compared with the average of 10,515,000 acres. In normal years a large proportion of the corn acreage in this classification is nearly equivalent, in grain yield, to the corn harvested for grain, but this year much of this acreage represents corn which produced little or no grain.

Production of corn in the North Central States in 1936 was 48.5 per cent of the 5-year average; in the North Atlantic States, 112.3 per cent; in the South Atlantic States, 106.7 per cent; in the South Central States, 85.5 per cent; and in the Western States, 60.9 per cent.

Despite the shortness of the crop, the farm value was slightly greater than that of the 1935 crop because of the increase in the farm price of corn. The 1936 crop was valued at \$1,514,203,000 with a price of 99.3 cents per bushel while the 1935 crop, with a farm price of 65.5 cents per bushel, was valued at \$1,505,396,000. The total value of the 1936 corn crop is greater than for any year since 1929 while the farm price is the highest since 1924.

OATS

The production of oats in 1936 of 789,100,000 bushels was one-third less than the 1935 production of 1,194,902,000 bushels and 35 per cent below the average of 1,215,102,000 bushels, but 46 per cent greater than the short crop of 542,306,000 bushels produced in the previous extreme drought season of 1934. Acute drought came later this year than in 1934,

COTTON AND GRAIN CROPS

enabling the oats crop to mature with less damage. Crop damage from drought, heat and insects was most severe in the important West North Central States where production is less than in 1935 by 45 per cent. The acreage of oats harvested for grain in 1936 was 33,213,000 acres, a reduction of 17 per cent from the 1935 acreage of 39,831,000 acres and the average of 40,015,000 acres. Abandonment of 16 per cent of the acreage sown in 1936 was due mainly to heavy loss of acreage in the leading oats States as a result of one of the most adverse seasons on record. A large acreage was so poor that it was pastured or cut for hay. The yield per harvested acre in 1936 was 23.8 bushels per acre compared with 30.0 bushels in 1935 and the average of 30.2 bushels.

In spite of the lower production, the total farm value of the crop was greater in 1936 than in 1935. At the farm price of 44.2 cents per bushel the value of the 1936 crop was \$348,610,000 while the 1935 crop, at a price of 26.3 cents per bushel, was valued at \$314,590,000.

BARLEY

The 1936 production of 147,452,000 bushels was only slightly more than half of the 1935 crop of 285,774,000 bushels and the average of 281,237,000 bushels. The area harvested in 1936 was 8,322,000 acres, a reduction of about one-third from the 12,371,000 acres harvested in 1935 and the average of 12,645,000 acres. The sharp reduction in acreage was due chiefly to severe drought, particularly in the normally heavy producing States of North and South Dakota where abandonment was unusually heavy. Yields

were spotty and uneven and generally below average in some of the important barley producing areas, with a tendency for the grain to be of light weight and rather low quality. The yield per acre in 1936 was 17.7 bushels per acre, compared with 23.1 bushels in 1935 and the average of 22.6 bushels.

Notwithstanding the low production, the farm value of the 1936 crop was somewhat above that of the 1935 crop because of a sharp rise in the farm price. The 1936 crop, at a price of 80 cents per bushel, was valued at \$118,007,000, while the 1935 crop was valued at \$107,997,000, with an average price of 37.8 cents per bushel. Reflecting the increased demand for barley for commercial uses, the farm price of the 1936 crop was the highest since 1920.

GRAIN SORGHUMS

Production of grain sorghums in 1936 at 55,701,000 bushels was only 57 per cent of the 1935 production of 98,495,000 bushels. The 5-year average production was 97,760,000 bushels. The area harvested in 1936 was 7,000,000 acres, about equal to the average of 7,016,000 acres, but well below the 9,354,000 acres harvested in 1935. Adverse growing conditions resulted in yields per acre far below average in the more important producing areas. The United States yield per acre in 1936 was 8 bushels, compared with 10.5 bushels in 1935 and the 10-year average of 14.7 bushels. The farm value of the 1936 crop was \$47,407,000 at an average farm price of 85.1 cents per bushel. In 1935 the price per bushel was 56.1 cents and the crop was valued at \$55,236,000.

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THE DAIRY INDUSTRY

By L. S. RICHARDSON

BUREAU OF DAIRY INDUSTRY, DEPARTMENT OF AGRICULTURE

EFFECT OF THE DROUGHT

Drought in 1936 again interfered with the dairy farmer's plans, with the result that milk production and the prices of dairy products varied considerably from their usual seasonal changes. Further decline in cow numbers, and the poor summer pastures and higher feed prices resulting from the drought combined to lower milk production during the first part of the year, but by fall better pastures and better prices had caused an increase in milk production during October and November. In many fluid milk areas price for milk had increased, and although feed prices were also higher, dairy farmers fed heavily in order to maintain production.

RECOVERY FACTORS ON DAIRY INCOME

Even with higher costs, dairy farmers in general fared better in 1936 than in the preceding year. Business recovery increased consumer buying power and helped maintain a good demand for dairy products, and the restricted production due to poor feed and fewer cows resulted in a somewhat higher level of prices for dairy products. The decline in consumption of fluid milk and cream and ice cream which occurred during the depression was halted and consumption was on the increase at the close of the year. On the basis of estimates for the first half of the year, the dairy farmers received a greater share of the consumer's dollar during 1936 than in any other year since 1929. Total farm income from the sale of dairy products in the first 10 months of 1936 was \$1,195,000,000 as compared to \$1,092,000,000 in the same period of 1935. This was an increase of \$103,000,000, or 9.4 per cent.

COW NUMBERS AND MILK PRODUCTION

The decline in the number of milk cows which began in the spring of

1934 has continued steadily. Feed shortage due to drought, and culling in connection with disease-eradication programs, have both been factors in the decline. The number of milk cows is now estimated at about 25,-200,000 as compared with 27,059,000 at the peak in the spring of 1934. The number of milk cows per hundred of population is now smaller than in any year since 1931 but is about the same as the average during the period 1900-25. The Federal Bureau of Agricultural Economics estimates that the rate of population growth during the next several years will be greater than the rate at which the number of milk cows will increase, which should tend to make conditions more favorable for the dairy farmer. Total milk production for 1936 is estimated to be about the same as for 1935. With prospects for little change in the number of milk cows during the next two or three years, any increase in total milk production as the result of increased demand and of more normal feed production will come largely from increased production per cow.

MANUFACTURED DAIRY PRODUCTS

Butter.—The total production of manufactured dairy products in 1936, in terms of milk equivalent, was 4 per cent less for the first 10 months than in the same period of 1935. Practically all this decrease was the result of the decrease in the manufacture of creamery butter which was greatly reduced by the drought. Butter production in July was 17 per cent less than a year earlier and the lowest for that month since 1923. Production for the first 10 months of 1936, however, was only 3 per cent less than a year earlier, or 1,387,-568,000 pounds as compared to 1,430,-771,000 pounds in the same period of 1935.

Cheese.—Cheese production in 1936

THE DAIRY INDUSTRY

was not reduced by the drought as much as butter production. Cheese production in the first seven months of 1936 was 13 per cent larger than a year earlier, and in the first 10 months of 1936 it was 6 per cent larger than a year earlier. Total cheese production for January to October, inclusive, was 574,000,000 pounds in 1936 and 542,000,000 pounds in 1935.

Canned Milk.—Production of evaporated milk in the first seven months of 1936 was approximately the same as the high production for the same period in 1935, and by November the total production was 1,820,000,000 pounds or 10 per cent larger than for the same period a year earlier. Condensed milk production was 226,000,000 pounds or 17 per cent larger than in the first 10 months of 1935.

Ice Cream.—Commercial production of ice cream, which was 42 per cent less in 1933 than in 1929, increased sharply in 1934 and 1935. Production for 1936 is estimated to be only 10 to 15 per cent less than in 1929.

STORAGE STOCKS AND IMPORTS

Stocks of butter, cheese, condensed and evaporated milk (in terms of milk equivalent) on Nov. 1, 1936 were 9 per cent less than on the same date a year earlier, but still 10 per cent above the 5-year average (1931-35). All of this reduction in storage stocks, however, was represented by lower butter stocks. Butter in storage on Nov. 1 was 105,319,000 pounds as compared to 120,210,000 pounds on the same date in 1935. Except for 1931 and 1932, the Nov. 1 stocks of butter were the lowest since 1925. Cheese stocks were 119,000,000 pounds as compared to 112,000,000 pounds a year earlier; this was nearly as high as ever reported for that date.

Since the World War concentrated products have been the principal dairy products exported from the United States, while foreign types of cheese have been the principal imports. In the last two years, however, considerable quantities of butter have been imported. Butter imports are larger when domestic

prices exceed foreign prices by more than the tariff rate of 14 cents. The highest importation of butter was in 1920 when the tariff rate was 6 cents, importations amounting to 37,454,000 pounds that year. Up to Oct. 1, 1936, butter imports amounted to 6,709,000 pounds, or 15,200,000 pounds less than for the same period of 1935. Cheese imports for the first eight months of 1936 were 36,000,000 pounds, or 20 per cent more than in the same period of 1935. The total in 1935 was 49,000,000 pounds, and the record importation of cheese was 81,000,000 pounds in 1927.

CONSUMPTION OF DAIRY PRODUCTS

In the depression period 1930-34 the estimated consumption of fluid milk and cream in cities and villages declined 6 per cent. This decline has been halted, and preliminary tabulations for 1935 indicate an increase of 3 per cent over 1934. Consumption in 1936 probably increased further. Consumption of creamery butter during the first seven months of 1936 was 1 per cent less than in 1935, and only 3 per cent above the 1925-35 average. Consumption of cheese for the 7-month period was 11 per cent greater than in 1935, and 36 per cent above the average. Consumption of ice cream has continued to increase since it reached its low point in 1933. Consumption of evaporated milk has continued to increase steadily since 1925, but the increase was marked during the depression years.

GOVERNMENT PROGRAMS AFFECTING THE DAIRY INDUSTRY

Benefits.—The soil conservation, market expansion, surplus removal, and marketing agreement programs undertaken by the Federal Government through the Department of Agriculture and various other agencies have been of indirect, if not direct, benefit to the dairy industry.

Federal Purchases.—Dairy products bought by the Federal Surplus Commodities Corporation from Oct. 1, 1935 to Sept. 19, 1936, for the purpose of improving farm markets and for distribution to families on relief,

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included 4,119,833 pounds of butter, 3,952,931 pounds of dry skim milk, 358,400 cases of evaporated milk, and 1,074,031 pounds of cheese. In November, arrangements were made to purchase additional 2,002,100 pounds of dry skim milk, or the equivalent of 50 carloads.

Herd Culling.—Many unprofitable milk cows were culled from the dairy herds in connection with the Government's purchase and removal of livestock from drought areas, and under disease-eradication programs. These activities reacted to the advantage of individual dairymen and the entire dairy industry as well. More than 6,450,000 breeding cattle, many of them dairy cattle, were under supervision for the control of Bang's disease in November, which represented 14 per cent of all breeding cattle. Tuberculosis among cattle is now reduced to less than one-half of one per cent of the cattle population in 43 States.

Marketing Agreements.—Marketing agreement programs enabled producers and handlers by cooperative action to deal more effectively with many marketing problems. For fluid milk these programs provide for producers to receive uniform prices calculated on a classified basis according to the use made of the milk. These marketing agreements are operating in more than two dozen sales areas. Marketing agreements are also in effect for the dry-skim-milk industry and the evaporated milk industry.

Financial assistance through the new soil conservation program afforded many dairy farmers an opportunity to reorganize their farming system and get a larger proportion of their acreage into grasses and legumes, crops that not only conserve the fertility of the soil but contribute to lower costs for milk production.

DISEASES OF PLANTS

BY HOWARD A. EDSON

BUREAU OF PLANT INDUSTRY, DEPARTMENT OF AGRICULTURE

WINTER INJURY AND DROUGHT

As a result of the abnormally cold weather throughout most of the United States during the early months of 1936, an unusual amount of winter injury to fruit trees and other perennials developed during the spring and summer of 1936. Only in Pacific Coast regions and in the far Southwest were the average winter temperatures normal or above. Central and Northern States between the Appalachian and the Rocky Mountains experienced a three-month average of from 6° to as many as 12° below normal, and in the Northern Plains the winter was from 15° to nearly 20° colder than the average for the preceding five winters.

Drought in the East and South in the spring, and drought and extremely high summer temperatures in the Central and Great Plains regions, not only adversely affected crop pro-

duction, but exercised a marked influence upon the development of plant diseases and made it difficult to differentiate between injuries due primarily to these physical causes and those produced by organic agencies such as root rot and wilt-producing parasites which, even under normal moisture and temperature conditions, reduce or destroy the capacity of attacked plants to absorb the required moisture from the soil, or to conduct it to the stems and leaves. In contrast to 1935, leaf spots and similar foliage diseases were relatively unimportant throughout the large area where drought prevailed.

The winter was apparently unfavorable for the survival of stem rust (*Puccinia graminis*) of small grains. Notwithstanding the epiphytotic of 1935 and the consequent abundance of inoculum in the fall, very little stem rust appeared in the spring even

DISEASES OF PLANTS

in the Southern grain fields, and the dry hot weather which prevailed in most of the grain belt, including the spring wheat area, practically eliminated rust as a factor in 1936.

DISEASE DEVELOPMENTS

Apple Scab Fungus.—The mild March which followed the severe winter stimulated unusually early development of the ascospores of the apple scab fungus (*Venturia inaequalis*) which was severe except where held in check by subsequent drought conditions or controlled by thorough and timely spraying. Studies made in late summer in the apple producing regions of Western Illinois after the drought was broken, demonstrated that the high temperatures and drought conditions during the summer months did not eradicate the scab fungus. On the contrary it was developing plentifully on leaves of unsprayed or inadequately sprayed trees, indicating the importance and necessity of vigilance in the application of control measures in 1937.

Rhizoctonia disease (*Corticium vagum*) was unusually severe in early plantings of potatoes in Florida causing retardation of germination and thin stands in many fields.

Cotton Seedlings.—Seedling diseases of cotton were prevalent in the Gulf States and combined with drought to produce poor stands, but growers who used treated seed escaped much of the injury caused by seed-borne parasites.

Downy mildew (*Peronospora tabacina*) of tobacco was found for the first time in Kentucky. It now appears to be established in eastern tobacco growing States from Maryland to Florida, and may be expected to occur with more or less regularity in seed beds of this region in the future. Its present known range in the United States includes Pennsylvania, Maryland, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Louisiana, and Texas.

Cabbage yellows (*Fusarium conglutinans*) appeared in the Charleston section of South Carolina from which it was previously unreported.

It destroyed 75 per cent of the crop in one of the two fields where it occurred.

Tomatoes.—Blossom end rot of tomato fruits, a physiological disorder associated with unbalanced water relations and attendant nutritional maladjustment, was very destructive in Mississippi and other Gulf States. Losses were variously estimated at 25 or 50 per cent or more of the crop. It appeared early and became more prevalent as the picking season advanced, resulting in a short harvesting period since practically no fruits of late maturing clusters remain sound. Spotted wilt, a virus disease of recent appearance in the United States, is becoming an important factor in tomato production in Pacific Coast States, and has also been reported from Central and Eastern points. It occurred to the extent of 30 per cent on tomatoes in greenhouses near Seattle this year and is recognized as an important field disease in California.

Blight (*Bacillus amylovorus*), a disease of pear, apple, and quince trees as well as of several other species of the Rose family, was generally more prevalent than usual, particularly on apples. However, in sections of Virginia and adjacent areas there appeared to be an actual recession of the prevalence of the disease on pears while apple orchards in close proximity showed a pronounced increase in both blossom blight and twig blight.

Quince rust (*Gymnosporangium clavipes*) appears to be extending its range and becoming more important on apples although it is possible that it has often been observed in the past and mistaken for the more familiar cedar rust (*G. juniperi-virginianae*). This common form of apple rust was more prevalent in the large apple producing sections of Virginia and West Virginia than in recent years, and seems to be increasing in areas where cedar removal has not been followed up.

Bean rust (*Uromyces phaseoli typica*) appeared early and with unusual severity in western Washington where it seriously damaged the

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crop. It was also reported generally more prevalent than usual in Atlantic Coast States, and caused considerable loss to plantings at various points from Florida to Massachusetts.

CONTROL OF PHONY PEACH DISEASE

Substantial progress was achieved during the year in the campaign for the control of the phony peach disease. This obscure malady of the virus class, which is known to have existed in peach plantings in Georgia for more than 50 years, has gradually extended its range, and during the past 20 years has come to be recognized as a potential menace to the commercial growing of peaches in the United States. It has become widespread throughout South Carolina, Georgia, northern Florida, Alabama, Mississippi, Louisiana, and eastern Texas, and is scatteringly present in Tennessee and Arkansas. A few cases have been found in North Carolina, Missouri, and Illinois; one in Oklahoma in 1932; two in Maryland, three in Kentucky in 1935, and one each in Indiana and Pennsylvania in 1936. Since 1929 the Federal Government, in cooperation with state agencies, has acted to prevent the spread of the disease through the movement of nursery stock from infected nurseries, and the discovery and destruction of infected trees in commercial and home orchards.

Responsibility for this work in the Federal Government is now vested in the Bureau of Entomology and Plant Quarantine of the Department of Agriculture. During the past two years emergency relief funds supplied to the Bureau, in addition to its regular appropriations, have made possible an expanded program. In addition to vigorous campaigns for control in the heavily infested areas, surveys have been undertaken to discover and destroy all infected trees in the lightly infected areas and any scattered infections in regions not previously known to be invaded. Surveys have been completed in Indiana, Ohio, Pennsylvania, New Jersey, and Delaware, and are under way in Virginia, West Virginia, and

Maryland, as well as in 12 southeastern States where the disease is known to exist. In addition to 692,127 phony peach trees removed between 1929 and 1935 inclusive, over 50,000,000 worthless peach trees were removed from 212 counties in the infected area during a 17-month period ended Dec. 1, 1936.

WHITE PINE BLISTER RUST

The white pine blister rust (*Cronartium ribicola*) was found for the first time in California on June 29 within the boundaries of the Siskiyou National Forest about a mile and a half south of the California-Oregon line, on a single branch of a young sugar pine (*Pinus lambertiana*). Subsequent scouting resulted in the location of 120 *Ribes* bushes and two sugar pines infected with the rust, in a locality about five miles south of the state line and south of the summit of the Siskiyou Mountains in California. This discovery is particularly significant since sugar pines and *Ribes* are numerous in the locality and conditions for the general spread of the infection over the northern Sierras into commercial pine areas are most favorable.

DUTCH ELM DISEASE CAMPAIGN

The campaign for the control of the Dutch elm disease (*Ceratostomella ulmi*) was actively pushed during the year with no alarming developments. As was to be expected, scouting has somewhat extended the area of known infection centering about New York City. A previously undiscovered center of infection was located near the railroad tracks at Cumberland, Md. Inspection of the wood rings indicated that the disease had been present there at least since 1934. In addition to the destruction of trees found infected with the Dutch elm disease, a very extensive campaign has been under way for the removal of dead and dying elms in the danger zone since such trees greatly favor the perpetuation and spread of the disease. Emergency relief funds allotted to the project have aided and extended the campaign and served to brighten the prospects of a successful outcome.

INSECT PESTS AND PLANT QUARANTINE

INSECT PESTS AND PLANT QUARANTINE

By LEE A. STRONG

CHIEF, U. S. BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

ORGANIZATION OF BUREAU ACTIVITIES

The organization of the activities of the Bureau of Entomology and Plant Quarantine of the Department of Agriculture has continued along substantially the same lines as that developed in connection with the reorganization authorized by the Secretary and approved by Congress for the fiscal year 1935. Allotments from processing taxes collected in Hawaii and Puerto Rico provided for special investigations on insect pests of these two localities. The work of a number of the activities concerned with the eradication or control of plant pests was materially expanded by allotments from appropriations of emergency funds. During the year 469 manuscripts were presented for publication and 451 were approved, 133 being submitted to the Department for publication and the remaining 318 to outside journals.

FRUIT INSECTS

The funds allotted for work on apple insects are still being devoted chiefly to investigations of the codling moth, particularly to finding an effective substitute for lead arsenate. The most encouraging development of the season was the high degree of control obtained by the use of phenothiazine, sometimes referred to as thioldiphenylamine, under conditions existing in the Pacific Northwest. In the Middle West and East the results were less favorable. In experiments in the Northwest with chemically treated bands, a load of 0.32 ounce of the beta-naphthol oil mixture per linear foot of 2-inch band destroyed practically all of the worms. In the Middle West and East 0.50 ounce of the standard formula per linear foot appeared necessary. In the eastern experiments the addition of small quantities of aluminum stearate reduced by about 20 per cent the quantity of chemical coating required. In tests against hibernating

codling moth larvae, a 20-per cent emulsion of pine oil alone killed 38 per cent of the larvae, whereas the addition of one per cent of alpha-naphthylamine increased the kill to 75 per cent, and the addition of one per cent of nicotine increased it to 100 per cent. An emulsion of ethylene dichloride gave even better control of peach borer without injury to the trees and at a somewhat lower cost than emulsions of cottonseed oil impregnated with paradichlorobenzene.

JAPANESE BEETLE CONTROL

Population studies carried on in New Jersey and nearby States indicated an increase of approximately 1,700 square miles in the area generally infested by the Japanese beetle up to June 30, 1936. The population in the older infested areas has continued to show more or less of a decrease. During the winter of 1935-36 mortalities of 50 per cent or more among larvae in the ground occurred in the area south of Philadelphia and in southern New Jersey. The lack of snow cover and the presence of ice on the surface of the ground during the period of low temperatures seem to have been factors contributing to this unusual mortality. Investigations on the Asiatic garden beetle have been restricted, attention having been given largely to the development of non-poisonous repellent materials for use in vegetable gardens where sprays leaving poisonous residues on the plants cannot be used. Those showing greatest promise were hydrated lime dust and a spray of hydrated lime with aluminum sulphate.

FRUIT FLIES

In December, 1935, the investigational work on fruit flies which are a potential menace to the mainland of the United States was brought together in a separate division, with field headquarters at Mexico City.

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Studies have been continued at laboratories in Mexico, Hawaii, Puerto Rico, and the Canal Zone. Traps have become increasingly important in determining the extent of adult infestations of the Mexican fruitfly in Texas and in indicating probable larval infestations. Through the use of these traps adults were taken monthly from September through May from 196 premises. The 256 specimens trapped represent a decrease of 115 from the previous year's total; however, there was an increase of 17 in the total number of premises infested. The length of time over which adults were trapped also increased two months over the previous year, as flies were trapped as early as September in 1935. Larval infestations of the Mexican fruitfly were found in four districts on five premises during the year. This represents a decrease of 25 premises from the previous year.

PHONY PEACH

Activities of the Department in the control of the phony peach disease, conducted in cooperation with the affected States during the last seven years, have resulted in reducing the disease in the heavily infected areas from approximately 18 per cent in 1929 to less than two per cent in 1935. The peach industry in this area, which was in a demoralized condition a few years ago owing primarily to the heavy losses resulting from this disease, is now being revived and expanded.

DATE SCALE

A final inspection was given the plantings in the date-growing districts not previously dropped as free from parlatoria date scale. The completion of these activities, together with the passage of a substantial period without finding any infestation, leads to the decision that this completes the Federal-State date scale eradication project.

FOREST INSECTS

As in previous years, one of the most important activities of the Division of Forest Insect Investigations

has been the cooperative service extended to the several Federal organizations administering timbered lands, such as the Forest Service, National Park Service, and Bureau of Indian Affairs, as well as to such emergency agencies as the Civilian Conservation Corps and the shelterbelt program, although advice to private timber owners has also been given. Owing to increased activity in forest conservation in connection with emergency activities, such cooperative service has greatly increased in recent years.

GYPSY AND BROWN-TAIL MOTHS

The allotment of emergency funds made it possible to expand and intensify the work on the gypsy moth project that had been planned in Pennsylvania and in the barrier zone in New England and eastern New York. The brown-tail moth project was begun Aug. 5, 1935, under an allotment of emergency funds for work on that insect in all of the New England States. Work was done in 366 towns in 40 counties of the six New England States, and 391,703 trees were cut and burned, a vast majority of these being worthless apple trees. In addition, cutting was done on 1,356 acres where individual trees and sprout growth, favorable as food for the brown-tail moth, occurred.

DUTCH ELM DISEASE ERADICATION

Several factors in this year's set-up of the organization for Dutch-elm-disease eradication contributed to a degree of continuity not hitherto achieved since eradication measures were begun in 1933. Settlement on a definite policy and division of functions mutually satisfactory to the Bureau and the cooperating Federal and State agencies furthered a direct and speedy approach to the problem of effectively ridding the known infected zones of the disease fungus and searching out other possible centers of infection. General supervision of the work was unchanged throughout the year. Allotment of sufficient emergency funds for skilled and un-

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skilled labor permitted the building up of a large organization for a delayed summer scouting program and a comprehensive eradication and sanitation campaign during the winter and spring. A nucleus of trained scouts from the carry-over of relief personnel was also available for early summer scouting in 1936. Finally, by the time for reorganization of summer scouting in 1936 the supervisory force had become somewhat accustomed to training wholly inexperienced men in scouting and eradication procedure. Twenty-four elms infected with the disease fungus were found by scouts working in or just outside the 10-mile protective zone surrounding the known infected territory in New Jersey and New York. There were no extensions of the infected zone in Connecticut. Single cases of the disease were found in the towns of Carmel and Southwest, Putnam County, and in the towns of Bloominggrove and Monroe, Orange County, N. Y. Infection centers containing five trees each were found in Union Township, Hunterdon County, and Wantage Township, Sussex County, N. J. Additional confirmations in New Jersey included three trees in Holmdel Township, Monmouth County; two cases each in Sparta Township, Sussex County, and Independence Township, Warren County; and single confirmations each in Tewksbury Township, Hunterdon County; Vernon Township, Sussex County; and White Township, Warren County. With the addition of the territory necessary to circumscribe these new infections the infected zone at the end of the year totaled 4,307 square miles, of which 2,539 square miles were in New Jersey, 1,495 in New York, and 283 in Connecticut.

WHITE PINE BLISTER RUST CONTROL

The outstanding feature in the spread of white pine blister rust during the year was the discovery of this disease on sugar pine in northern California on June 29, 1936. This is the first time the rust has been reported from California. While its

establishment in that State constitutes a direct threat to about 2,000,000 acres of valuable sugar pine forests, the eventual spread of the rust into California had been anticipated and the protection of the sugar pine was already under way, with the result that initial control has already been established on over 400,000 acres of these California forests.

EUROPEAN CORN BORER

The European corn borer increased in abundance in 1935 in Ohio, Michigan, and Indiana in the one-generation area, as compared with the numbers recorded during the drought periods since 1930. Apparently this was a result of the favorable climatic conditions that prevailed in 1935. Decided increases also occurred in parts of Connecticut, New Jersey, and Long Island in the multiple-generation area.

HESSIAN FLY

Although extremely heavy infestations of the hessian fly occurred over a considerable portion of the Wheat Belt in the fall of 1935 and caused much damage, the extremely dry conditions of the following spring and summer prevented serious damage from the spring brood and reduced the hessian fly population to a low ebb. Major emphasis in investigational work has been placed on a study of fly reaction to various varieties and strains of wheat, and, in cooperation with the plant breeders, on the discovery and development of resistant varieties. A variety having almost complete immunity under California conditions has been discovered and has been successfully carried into the second and third back-crosses on commercially desirable club wheats. One variety of resistant spring wheat well suited to the soft-wheat region has been discovered at Lafayette, Ind., and five others have shown marked resistance and may be of value as fly-resistant parents in breeding work. In Kansas 13 strains have been found that have definite resistance, four of which have commercial value.

XI. AGRICULTURE AND ALLIED INDUSTRIES

GRASSHOPPERS

A very intensive grasshopper outbreak developed in the spring of 1936, concomitant with drought conditions, in Nebraska, Iowa, Kansas, Missouri, Oklahoma, Wyoming, Montana, northern Arkansas, and eastern Colorado, with minor infestations in certain other Western States. The occurrence of this outbreak was fairly accurately predicted in 1935 in the States covered by the cooperative annual fall grasshopper survey, which indicated the areas in which the most severe infestations could be expected. The survey did not include Arkansas, Missouri, and Oklahoma, where severe infestations developed. An appropriation of \$250,000, made by Congress late in June, was utilized to its full extent in purchasing materials for poisoned bait to aid the infested States, but was far from adequate to meet the requirements. Infestations in the Middle Western States were accompanied by extensive flights, the indications being that such migrations had spread the infestation over areas not previously infested or only lightly so. The severe infestation to croplands has been accompanied by probably the most severe range-land infestation in recent years, particularly in Colorado, Wyoming, and Montana.

BLACK STEM RUST CONTROL

During the fiscal year 1936 more than 33,000,000 rust-spreading barberry bushes were destroyed on 8,470 properties in the 17 States of Colorado, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Montana, Nebraska, North Dakota, Ohio, Pennsylvania, South Dakota, Virginia, West Virginia, Wisconsin, and Wyoming. Control work was conducted on approximately 50,000 square miles in 278 counties. In addition to the expansion of field operations in the 13 States of the original control area, allotments of emergency funds made possible similar work in some of the important grain-growing areas of Missouri, Pennsylvania, Virginia, and West Virginia.

WIREWORMS

In combating the various species of wireworms that occur in injurious numbers in the irrigated sections of the West and in the Gulf region practical field work has indicated the relative efficiency of soil fumigation with naphthalene, flooding at a period when the soil temperatures are high, drying out the soil through the withholding of irrigation water, trapping of wireworm adults, and the practice of certain crop rotations that are detrimental to wireworm development.

MEXICAN BEAN BEETLE

The Mexican bean beetle continued to be the most important pest of beans in the United States, and in widely separated parts of the infested area it caused severe damage to beans not treated with insecticides. Field experiments with insecticides in Ohio and Virginia on beans grown for the green-bean market or for canning have demonstrated that this pest can be controlled at a minimum cost by applying sprays or dusts containing rotenone derived from derris or cube without danger of incurring harmful residues on the market product.

SUGAR BEET LEAFHOPPER

In the southern Idaho beet-growing area early-season indications were that light infestation by the beet leafhopper could be expected. This prospect was borne out, but the small number of the insects from the wildland breeding areas that entered the cultivated fields did not do so until later in the season than normally. Consequently this pest did not seriously affect production of beets in this section.

COTTON INSECTS

The winter of 1935-36 was especially severe on the boll weevil, as indicated by the fact that no live weevils were found in the spring of 1936 in Spanish moss at Florence, S. C., and Tallulah, La., where many boll weevils are usually found during the spring examinations. In a large series of hibernation cages at Eufaula, Okla., no boll weevils sur-

INSECT PESTS AND PLANT QUARANTINE

vived, at Florence the survival was lower than in any previous year of which we have record, and at Tallulah it was much below normal. Only in Texas were conditions favorable for high survival; at College Station and Port Lavaca, Tex., the weevils were more abundant than usual early in the spring. In spite of the low survival in hibernation cages and in Spanish moss, in Louisiana and South Carolina boll weevils were found under the leaves and trash in the woods close to cotton fields. In the vicinity of Tallulah, an average of 141 live weevils per acre were found under leaves and trash within 100 yards of cotton fields, while at Florence, where the collections were made within 50 yards of the edge of the woods, an average of 311 live weevils per acre were found. These studies indicate the importance in any boll weevil-control program of giving special attention to the destruction of overwintering weevils on the surface of the soil in protected places near cotton fields.

In the pink bollworm investigations special attention was given to the establishment of introduced parasites, the studies of varietal resistance, the factors influencing survival under field conditions, and control by cultural methods and insecticides. Although no varietal resistance was found in the nine varieties of cotton tested, the tests indicated the importance of early maturity in reducing pink bollworm damage.

BEEKEEPING

Bacillus larvae, a bacterium that causes American foul brood, was found to possess a remarkable resistance to heat. Studies dealing with pollen supplies, brood rearing, and adult population reveal that deficiency in pollen is a major cause of weak colonies.

INSECTS AFFECTING MAN AND ANIMALS

Research on the biology and habits of screwworms and other blowflies and on the development of more economical and effective control methods against these pests has been

continued. In addition to giving advice to other organizations on special programs for mosquito control, investigations have been carried on to determine the flight range of the more important species in the Pacific Northwest, the duration of viability of the eggs of flood-water and salt-marsh species, and control methods for snow-water, salt-marsh, and other pestiferous forms.

Some of the more important results of the screwworm-control program are: (1) Reduction of the number of cases from approximately 1,350,000 in 1934 to actually 266,283 in 1935, (2) reduction of death losses of infested animals from more than 12 per cent in 1934 to 2.13 per cent in 1935, (3) prevention of spread of screwworms to more northern localities.

FOREIGN PARASITE INTRODUCTION

During the year particular attention was given to the importation of natural enemies of the oriental fruit moth, the pine shoot moth, the larch casebearer, and the alfalfa weevil. Also large-scale importations of fruit-fly parasites were made into Hawaii under special funds provided for this purpose and into Puerto Rico against the sugarcane borer and other pests.

INSECTICIDE INVESTIGATIONS

About 100 synthetic organic compounds were made to test their possible insecticidal usefulness, such tests being made by other divisions. Of the compounds tested against mosquito larvae, the following were most toxic, being effective at five parts per million or less: Phenothioxindibenzothioephene, thioxanthidol, dibenzofuran, 2-chlorodibenzofuran, 2-aminodibenzofuran, 2-methylantraquinone, p-chlorodiphenyl, 2-3-4-6 tetrachlorophenol, n-phenyl-l-naphthylamine, phenanthrene, xanthene, p-bromo-nitrobenzene, and p-dinitrobenzene. In tests against the codling moth, the first three of these compounds were among the most effective, as were also 4-6-dinitro-o-cresol methyl ether, thiocoumarin, hexachlorophenol, diphenyl disulphide, p-nitrosodimethylaniline, thioxanthone,

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4-6-dinitro-o-cresol acetate, and the three nitroiodobenzenes, of which the para compound is the best.

PLANT QUARANTINES

During the year 1,151,960 package shipments were inspected for quarantine compliance at 22 points and 2,263 violations of Federal quarantine regulations were intercepted. The number of quarantines involved during the year remained the same as the previous fiscal year, namely, 24 foreign-plant quarantines and regulatory orders, eight domestic-plant quarantines, and four miscellaneous regulatory measures. A total of 3,273,621 plants, bulbs, cuttings, etc., were imported, as compared with 2,624,694 in 1935. Increased importations were noted in all classes except narcissus, rose, and fruit, which decreased. The largest rate of increase is in importations of gladiolus; 637,908, or 332 per cent, more gladiolus corms and cormels were imported in 1936 than in 1935. The largest rate of decrease is in rose; 22,961, or 77 per cent, less rose plants and cuttings were imported in 1936 than in 1935. In 1936 more special permits were issued than in 1935, or

any other previous year since Quarantine No. 37 was promulgated. In addition, the Bureau supervised the entry of 25,126 parcels of samples of cotton, cotton linters, cotton waste, and bagging imported by freight, express, and parcel post, and as passenger baggage, and inspection was made under Quarantine No. 41, which restricts the importation of corn and related plants, of seeds of related plants, 802 pounds; corn on the cob, green, 47,147 pounds. The Bureau also supervised the entry under Quarantine No. 55 of rice straw, 1,855 bales and five bundles; articles made of rice straw, 5,064; and seed or paddy rice, 31 pounds. The total of these importations is 52,972,203 bunches of bananas, 932,538 crates of pineapples, and 246,126,255 pounds of all other commodities listed. There was a decided increase in foreign parcel-post inspection during the year, as indicated by the total number of packages inspected at all ports, 191,740, compared with 107,450 for the fiscal year 1935. A total of 27,259 freight cars entered the United States from Mexico during the year. A total of 8,181 cars were fumigated during the year.

FISHERIES

By CHARLES E. JACKSON

DEPUTY COMMISSIONER OF FISHERIES, DEPARTMENT OF COMMERCE

GENERAL

The fiscal year 1936 presented a more optimistic picture in many phases of our commercial fisheries than has been evident for several years. This condition has been reflected in increased activity in the production of some of the better-known species, such as salmon and tuna on the Pacific Coast; in the development of new fisheries, such as that for rosefish off the New England Coast; in the building of new fishing craft on both coasts, and in the general installation of new and more modern equipment for processing and handling fishery products.

Accompanying these indications of

improvement were generally firmer prices for fish and shellfish and their products. It is fortunate that this industry which has been so direly affected by the economic conditions of the past few years, bears promise of again taking its proper place in the economic structure of the nation.

TECHNOLOGY

This section of the Division of Fishery Industries carries on investigations dealing with the production, utilization, and preservation of fishery products. Such studies include the principles of canning, salting, smoking, dehydration and refrigeration, the nutritive value of fish and

FISHERIES

FISHERIES OF THE UNITED STATES AND ALASKA

Section and Year	Fisher- men	Fishing Vessels	Fishing Boats	Catch	
	Number	Number	Number	Pounds	Value
New England States, 1933.....	17,073	595	8,400	499,936,000	\$13,486,000
Middle Atlantic States, 1933.....	8,574	407	3,870	169,753,000	4,811,000
Chesapeake Bay States, 1934.....	20,591	277	12,717	289,011,000	5,943,000
South Atlantic and Gulf States, 1934..	24,898	740	14,398	447,914,000	9,994,000
Pacific Coast States, 1934.....	19,232	954	6,373	1,546,102,000	19,950,000
Lake States, 1934.....	7,579	490	3,070	96,411,000	5,124,000
Mississippi River and tributaries, 1931	15,884	...	14,546	82,383,000	2,897,000
Alaska, 1934.....	9,433	636	4,275	819,269,000	11,958,000
Total.....	123,264	4,099	67,649	3,950,779,000	74,163,000

shellfish, and the manufacture and uses of fishery by-products. During the past year, further methods of fish cookery and canning were developed, studies made of fish spoilage, rancidity in fish, chemistry of fish proteins, tests for determining the relative freshness of cod and pollock, bacterial decomposition of fresh fish, disinfectants for sponges, preparation and extraction of oils from fish livers and salmon cannery waste, manufacture of fish meal for animal feeding and fish feeding, and studies of the mineral constituents of fishery products were made.

SCIENTIFIC RESEARCH

Although the activities of the scientific staff have been directed chiefly toward continuing the long range investigations of the various commercial and game fisheries of the country, significant achievement has been made in several distinct but concurrent lines of research. The difficulties presented by the vast development in the Columbia River watershed made apparent the necessity for proper husbandry in all its phases of the fishery resources in that region. Apart from the development of protective devices of a magnitude hitherto unheard of, a thorough survey of the upper spawning regions of the river system was undertaken and is now largely completed. By such means information was obtained on the locality and availability of natural spawning beds, obstruction to upstream migration, and other facts necessary for a comprehensive view of

this enormous problem. Noteworthy also in the Bureau's salmon work was the result of the cooperative study with the National Cannery Association on the seasonal condition of the fish as a guide to proper use and packing of the product. These widely divergent phases of the salmon investigations are none the less integral parts of a well conceived program of conservation.

In the rapidly growing field of stream management the Bureau has had an intensely active rôle, and in several widely separated regions has been carrying out its operation of test streams under controlled conditions to determine ways and means of inducing such bodies of water to support large communities of game fish under enhanced fishing conditions. With complete control of actual stocking of streams by constant observations on stream conditions and from the catches of co-operating anglers, a highly accurate knowledge of the carrying capacity of streams has been gained. This type of research under natural conditions is contributing much to fundamental knowledge on which will be based the science of stream management in the future.

The problem of stream pollution as it affects aquatic life has been the object of intense scientific activity by the Bureau. A solution of the problem with its ever increasing trends of disastrous consequences has been approached along lines particularly designed to meet the needs of fish protection, as differentiated from

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other aspects of pollution control. Water purity standards and simplified methods of biochemical analysis have been developed, as well as the working out of means of transporting highly mobile field survey units to affected areas often isolated and otherwise inaccessible.

FISH CULTURE

The Division of Fish Culture is a producing organization, its products consisting of young fish, or eggs, destined for restocking the lakes, streams, rivers, and ocean. An all-time record for high production was achieved, the output amounting to 8,171,000,000 eggs and fish of various sizes, 160,000,000 of these consisting of larger specimens ranging up to the legal size for angling in the case of game varieties. The total of the latter group was 118,000,000, the remainder of the production consisting of forms which are commercialized for food. Three new hatcheries were under construction during the year, the funds being obtained by W.P.A. (Works Progress Administration) allotment. Individuals or organizations who submitted applications for fish to restock local waters are required whenever possible to receive the fish at the hatcheries or defray the cost of transportation. Much of the hatchery and distribution work was carried on under cooperative arrangements with the State Fish and Game Departments.

ALASKA FISHERIES

The primary objectives of the Bureau of Fisheries in Alaska are to conserve the salmon and other fisheries, and to protect and maintain the fur-seal herd of the Pribilof Islands. The fisheries of Alaska during 1935 employed 22,620 persons, of which 9,208 were fishermen. The catch in round weight, exclusive of whales, amounted to 638,335,513 pounds, valued at \$8,702,783. The round weight of whales could not be determined, but their products amounted to 10,374,117 pounds, valued at \$390,384. Of the total catch, exclusive of whales, 434,003,732 pounds, valued at

\$6,969,791, consisted of salmon; 201,789,468 pounds, valued at \$1,586,032, consisted of other fish, and 2,542,313 pounds, valued at \$146,960, consisted of shellfish.

There were 228 establishments (exclusive of duplication) engaged in the fisheries of Alaska in 1935; of these, 115 canned fish, 115 cured fish, 21 manufactured by-products, and 54 handled fresh and frozen fishery products. The output of these establishments amounted to 365,907,466 pounds, valued at \$31,230,646. The salmon industry was by far the most important and produced 262,249,611 pounds, valued at \$27,332,520. The herring industry was next in importance with a production of 81,147,693 pounds, valued at \$2,374,092. The halibut industry ranked third and produced 9,805,680 pounds, valued at \$607,845. Of the remainder, whale and clam products were most important in value.

FUR SEALS

The fur-seal herd of the Pribilof Islands is by far the largest in the world. This herd, together with others of the North Pacific Ocean, is protected from capture at sea by the Convention of July 7, 1911, between the United States, Great Britain, Japan, and Russia. Under this protection and the careful management of the Bureau of Fisheries experts, this herd has grown from 130,000 in 1911 to about 1,680,000 animals in 1936. During these years there have been taken 713,592 fur-seal skins for manufacture, the annual yield varying in the different years from 3,191 in 1912 to 57,296 in 1935. The take of only 52,446 sealskins in 1936 was due to weather conditions unfavorable to sealing operations. Only the skins of three-year-old surplus males are taken. The herd under this system has been increasing at the rate of about 8 per cent annually. The rehabilitation of the Pribilof Islands fur-seal herd is an outstanding example of what may be accomplished in conservation through international cooperation.

FORESTRY

FORESTRY

By CHARLES E. RANDALL

UNITED STATES FOREST SERVICE

GENERAL

Expansion and improvement of publicly owned forest areas and further progress in the planned utilization of their resources to promote economic stability of forest-dependent communities, characterized the progress of forestry in the United States during 1936. Publicly owned forests continued to provide, during the year, emergency employment for thousands of citizens on necessary and non-competitive forest improvement and protective work. The year also saw a decided impetus given toward practical application of forestry measures in the control of floods.

Problems of forestry and forest conservation in the United States relate to the management and use of 615,000,000 acres of permanent forest area, or approximately one-third the entire land area of the nation. Some 160,000,000 acres of this are owned by the Federal Government; some 19,000,000 are in State, county and municipal ownership, and about 435,000,000 are privately owned.

FEDERAL FOREST PURCHASES

Throughout the natural forest regions of the country, particularly east of the Great Plains, are many millions of acres of cut-over land which still is primarily suited to the growing of timber and the protection of important watersheds. The larger part of them have been severely cut over and devastated by repeated burnings. Large areas of such lands have become tax delinquent. Public ownership apparently offers the only hope for restoration of many of these areas to productivity. A total of 3,579,580 acres of such lands were purchased by the Federal Government during the fiscal year 1936 as additions to existing National Forests, or for the creation of new National Forests.

Newly acquired lands have been

placed under primary stages of protection by the Forest Service against forest fires. On many of the purchased acres, their rehabilitation will involve the planting of millions of trees in order to return them to productivity of timber and to revitalize their function as watershed protectors. More than 300,000,000 trees were planted on National Forest land during the calendar year 1936, a large portion of which were on these newly acquired areas.

Additions during the year brought the number of National Forests to 154, and 90 additional purchase units have now been designated representing lands in process of acquisition but not yet formally proclaimed as National Forests. National Forests and Purchase Units together had a gross area of 197,434,517 acres, including two National Forests in Alaska and one National Forest and a purchase unit in Puerto Rico. The boundaries of the Forest and Units enclose 31,455,826 acres in ownership other than that of the Federal Government. The National Forest system is administered by the Forest Service, a bureau of the United States Department of Agriculture, with a permanent personnel of approximately 3,000.

A total of 9,108,087 acres of forest land was reported under state ownership at the end of 1936; these forests are managed and administered by forestry and conservation officials in 44 States.

EMERGENCY FOREST WORK

The forests of the nation continued through 1936 to provide a reservoir of work for the unemployed. Emergency work programs carried out under the direction of the Forest Service have been handled through Emergency Conservation work (the CCC), Emergency Relief Act and Drought Relief allotments during the year. Once funds were allotted, proj-

XI. AGRICULTURE AND ALLIED INDUSTRIES

ects were started without delay and men were put to work rapidly. During the last three years more than 1,500,000 young men in 1,207 Civilian Conservation Corps camps have been engaged in forest activities on T.V.A., national, state, and private lands under the supervision of the Forest Service. Their work has included fire fighting and prevention, varied construction programs, combat of tree-destroying insects and diseases, forest planting, range development, erosion control, development of public recreation facilities and hundreds of miscellaneous tasks.

Emergency relief workers accounted for the major portion of the year's improvement accomplishments on the National Forests, which included the construction of 254 miles of forest highways, 5,638 miles of forest development roads, 1,965 miles of trails, and a broad program of extension of fire protection facilities including the construction of many miles of telephone lines, lookout towers and other improvements. Emergency relief work has speeded up the program of National Forest improvements, accomplishments having proceeded at a rate greatly exceeding that realized under regular appropriations prior to 1933.

FOREST AND FLOODS

Disastrous floods in the spring of 1936 focussed national attention on the importance of forests as protectors of watersheds. Various conferences were held, attended by delegates from Federal agencies and other public and private organizations, to coordinate the work of foresters and engineers in formulating integrated programs to protect the nation against floods. The protection and maintenance of existing forests and the reforestation of denuded areas were declared to be two of the most vital necessities in any broad program of flood control. The act of Congress of June 22, 1936, authorized investigations relating to flood control projects. The Department of Agriculture's responsibility in this work deals mainly with the studies of upstream factors, such, for example,

as the relationships of forests to watershed protection and water conservation.

In September, 800 delegates attended the international Upstream Engineering Conference in Washington, D. C. Its aim was to consolidate, for the engineering profession, information concerning problems and techniques of the development and control of water resources and land areas.

"The objects of upstream engineering," wrote President Roosevelt, in authorizing this conference, "are through forestry and land-management to keep water out of our streams, to control its action once in the stream, and generally to retard the journey of the raindrop to the sea."

COOPERATIVE ACTIVITIES

The Federal Government, under the provisions of the Clarke-McNary Act, cooperates with the States in fire suppression and prevention and in the distribution of planting stock to farmers. A total of \$4,540,744 of State and private funds and \$1,145,731 of Federal funds were spent in cooperative fire protection in 1935. Approximately 26,000,000 trees distributed by cooperating States were planted in windbreaks, shelterbelts and farm woodlands by farmers. Increased attention to land-use planning by Federal and state agencies called for extensive cooperation with private owners whose holdings represent some 75 per cent of the total forest area. To facilitate this, there was created within the Forest Service a separate division responsible for carrying out cooperative activities. This division began the compilation of data from which plans were prepared with a view to aiding private owners in converting current and contemplated forest operations from a liquidation to a sustained-yield basis. Other work by this division included preliminary activities designed to establish comparable cooperation with farm woodland owners, and a survey to determine standards and payments for tree-planting under the Agricultural Conservation Program.

FORESTRY

WORK ON RANGE LANDS

Extensive work was carried out on range lands within the National Forests. Water sources were developed, fences built and insect pests and rodents controlled over an area of some 15,000,000 acres. National Forest ranges were used by approximately 26,500 permittees; close to 12,000,000 sheep and cattle grazed in these areas. One of the outstanding accomplishments of the Forest Service during the year was the preparation of a report on the western range in response to a Senate resolution. This report, published as Senate Document 199, 74th Congress, 2nd Session, is the first complete survey of the entire western range situation. It showed a 52-per cent depletion in forage values on 728,000,000 acres of western range lands. This reduction in vegetative production resulted from excessive stocking, recurrent drought, financial handicaps, unstable land-use policy and related causes. Definite recommendations were made in the report for a future policy designed to restore and maintain range resources vital to a basic western industry and to the economic structure of large areas in the western States.

WILDLIFE MANAGEMENT

A separate division for wildlife management was created in the Forest Service June 1, 1936, to interrelate this resource with economic, recreational and other forest uses in the National Forests. Cooperation by the Forest Service with other agencies will be carried out by this division. About 1,500,000 big game animals were reported living on the National Forests at the beginning of the year; this represents a substantial increase over the previous year,

and about 120 per cent increase in the past 12 years.

PUBLIC USE OF NATIONAL FORESTS

During the fiscal year 1936, a total of 71,000,000 people visited the National Forests, an increase of 13,000,000 over the preceding year. Some 12,000,000 made direct use of National Forest recreation facilities as campers, picnickers, special permittees and the like. Another 12,000,000 visited the National Forests to enjoy the scenic attractions. The remainder were transient or incidental visitors. The development of 3,660 free public campgrounds had been completed or partially completed up to June 30, 1936. Detailed recreational plans covering 2,600,000 acres have been prepared to care for the steadily increased number of people who use the National Forests for outdoor recreation.

FOREST FIRES

In 1936 drought conditions considerably heightened the forest fire hazard throughout those forest areas bordering the Great Plains. Beginning early in the season in the South, fires occurred in large numbers in the northern Lake States, Montana and Northern Idaho, and, in the early fall in coastal forests of Oregon and southern Washington. However, despite the increase in number of fires, the total acreage burned over within the National Forests and protective areas was but little more than half of the average acreage burned over in the previous five years. The presence of Civilian Conservation Corps enrollees and the recent large increase in roads, trails, and communication facilities aided in keeping fire losses down.

XI. AGRICULTURE AND ALLIED INDUSTRIES

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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- AMERICAN ASSN. OF NURSERYMEN, P. O. Box 355, Louisiana, Mo.
AMERICAN COUNTRY LIFE ASSN., 105 E. 22nd Street, New York City.
AMERICAN FARM BUREAU FEDERATION, 58 E. Washington St., Chicago, Ill.
AMERICAN FORESTRY ASSN., 1713 K St., N. W., Washington, D. C.
AMERICAN NATIONAL LIVESTOCK ASSN., 515 Cooper Bldg., Denver, Col.
AMERICAN ORNITHOLOGISTS' UNION, 1939 Biltmore St., N. W., Washington, D. C.
AMERICAN PHYTOPATHOLOGICAL SOCIETY, Bureau of Plant Industry, Washington, D. C.
AMERICAN POULTRY ASSN., Fort Wayne, Ind.
AMERICAN SOCIETY OF AGRONOMY, Iowa State College, Ames, Ia.
AMERICAN SOCIETY OF ANIMAL PRODUCTION, University of Nebraska, Lincoln, Neb.
AMERICAN SOCIETY OF EQUITY, 311 Daily Star Bldg., Minneapolis, Minn.
AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, Lock Box 299, Geneva, N. Y.
AMERICAN SOCIETY OF MAMMALOGISTS, University of Michigan, Ann Arbor, Mich.
AMERICAN VETERINARY MEDICAL ASSN., 221 N. La Salle St., Chicago, Ill.
ASSOCIATION OF LAND-GRANT COLLEGES AND UNIVERSITIES, Newark, Del.
BOYCE-THOMPSON INSTITUTE FOR PLANT RESEARCH INC., 1086 N. Broadway, Yonkers, N. Y.
DAIRYMEN'S LEAGUE COOPERATIVE ASSOCIATION, INC., 11 West 42nd St., New York City.
FARM WOMEN'S NATIONAL CONGRESS, Clarksville, Ia.
INSTITUTE OF AMERICAN MEAT PACKERS, 509 S. Wabash Ave., Chicago, Ill.
INTERNATIONAL FARM CONGRESS OF AMERICA, Continental Bldg., Kansas City, Mo.
IZAAB WALTON LEAGUE OF AMERICA (THE), Merchandise Mart, Chicago, Ill.
JEWISH AGRICULTURE SOCIETY, INC., 301 E. 14th Street, New York City.
MIDDLE ATLANTIC FISHERIES ASSN., 203 Front St., New York City.
NATIONAL ASSN. OF AUDUBON SOCIETIES, 1775 Broadway, New York City.
NATIONAL BOARD OF FARM ORGANIZATIONS, 1731 I Street N. W., Washington, D. C.
NATIONAL DAIRY COUNCIL, 111 N. Canal St., Chicago, Ill.
NATIONAL EDUCATIONAL AND COOPERATIVE FARMERS' UNION OF AMERICA, 1731 I Street N. W., Washington, D. C.
NATIONAL FERTILIZER ASSN., 676 Investment Bldg., Washington, D. C.
NATIONAL GRANGE, 970 College Avenue, Columbus, O.
NATIONAL HIGHWAYS ASSOCIATION, Bass River, Cape Cod, Mass.
NATIONAL LIVESTOCK AND MEAT BOARD, 407 S. Dearborn St., Chicago, Ill.
NATIONAL POULTRY COUNCIL, Davisville, R. I.
PEOPLE'S LOBBY, INC., 113 First St. N. E., Washington, D. C.
SOCIETY OF AMERICAN FLORISTS AND ORNAMENTAL HORTICULTURISTS, Stevens Hotel, Chicago, Ill.
SOCIETY OF AMERICAN FORESTERS, 810 Hill Bldg., Washington, D. C.
UNITED STATES LIVESTOCK SANITARY ASSN., 33 Livestock Exchange Bldg., Wichita, Kan.
VEGETABLE GROWERS' ASSN. OF AMERICA, c/o F. L. Allen Co., Philadelphia, Pa.
WOMAN'S NATIONAL FARM AND GARDEN ASSN., INC., 1928 Spruce St., Philadelphia, Pa.

DIVISION XII

MINERAL INDUSTRIES

GOLD AND SILVER

By CHARLES W. HENDERSON

U. S. BUREAU OF MINES, DEPARTMENT OF THE INTERIOR

NATIONALIZATION OF GOLD AND SILVER

Previous issues of THE AMERICAN YEAR BOOK have reviewed the nationalization of gold and silver since March, 1933 and have followed the international situation since the abandonment of the gold standard by Great Britain in September, 1931. Conditions in 1936 have been fully covered in Federal documents. The table next page shows the analysis of changes in the monetary gold stock of the United States from 1932 to November, 1936, inclusive.

The Secretary of the Treasury in his daily statement of the United States Treasury for Dec. 31, 1936 shows current assets and liabilities as tabulated on pp. 452-53.

NEW TREASURY GOLD POLICY

On Dec. 21, 1936 the Secretary of the Treasury announced that the Treasury "proposes, whenever it is deemed advisable and in the public interest to do so, to take appropriate action with respect to net additional acquisitions or releases of gold by the Treasury Department. This will be accomplished by the sale of additional public-debt obligations, the proceeds of which will be used for the purchase of gold, and by the purchase or redemption of outstanding obligations in the case of movements in the reverse direction." (See *Federal Reserve Bulletin*, January, 1937.)

The operations under this policy permit neutralizing the effect on mem-

ber bank reserves of future gold acquisitions or sales of such gold. Effects on reserves of additions to the gold supply, either from imports or from new production, will be offset by the sale to the public of an equivalent amount of United States Government obligations and by the setting aside of the purchased gold in an inactive account in the Treasury. In this way the gold will be kept out of the country's credit base. An outward movement of gold acquired through sale of bills will be similarly offset by the purchase or redemption of United States obligations in the market, thus restoring to it the funds lost through the export of gold. To this extent, therefore, the volume of member bank reserves will neither increase nor decrease as the result of changes in the supply of gold.

The announcement by the Secretary of the Treasury states that the action was taken after conferring with the Board of Governors of the Federal Reserve System. The problem of dealing with the volume of excess reserves which is now in existence will not be affected by the new policy.

CONTINUED GROWTH OF MEMBER BANK RESERVES

Reserve balances of member banks, which have been increasing rapidly in recent years, reached a new high level of \$6,800,000,000 in the early part of December, largely as a result of continued gold imports. Of this amount \$4,600,000,000 constituted re-

XII. MINERAL INDUSTRIES

CHANGES IN MONETARY GOLD STOCK OF THE UNITED STATES

(Federal Reserve Bulletin)

(In millions of dollars)

Year or month	Gold stock at end of year or month	Increase in gold stock	Net gold import	Net release from ear-mark ¹	Other factors ²
$\$1 = 25\text{--}8/10$ grains of gold $9/10$ fine; i.e., an ounce of fine gold = \$20.67					
1932.....	4,226	52.9	-446.2	457.5	41.6
1933.....	4,036	-190.4	-173.5	-58.0	41.1
1934—January.....	4,033	-2.1	-2.8	12.2	-11.6
$\$1 = 15\text{--}5/21$ grains of gold $9/10$ fine; i.e., an ounce of fine gold = \$35					
February.....	7,438	3,405.0	452.6	68.7	2,883.8
March.....	7,695	256.8	237.3	-0.8	20.3
April.....	7,757	61.5	54.7	-1.1	7.9
May.....	7,779	22.4	33.6	0.5	-11.6
June.....	7,856	77.1	63.7	1.0	12.5
July.....	7,931	74.4	52.3	0.6	21.4
August.....	7,978	47.4	37.2	-1.1	11.2
September.....	7,978	.4	-18.7	2.4	16.6
October.....	8,002	23.5	10.8	.3	12.4
November.....	8,132	129.9	120.9	-.1	9.1
December.....	8,238	106.2	92.1	.1	14.1
Year.....	8,238	4,202.5	1,133.9	82.6	2,986.1
1935—January.....	8,391	153.3	149.4	1.1	2.8
February.....	8,527	135.3	122.8	.2	12.3
March.....	8,567	40.4	13.0	-.7	28.1
April.....	8,710	143.4	148.6	-2.3	-3.0
May.....	8,858	148.1	140.0	-1.5	9.6
June.....	9,116	257.1	230.4	1.0	25.8
July.....	9,144	27.9	16.2	-.4	12.1
August.....	9,203	59.5	46.0	1.4	12.2
September.....	9,368	165.0	156.7	1.0	7.3
October.....	9,693	325.2	315.3	-1.9	11.8
November.....	9,920	226.7	210.6	.6	15.5
December.....	10,125	205.2	190.0	1.3	13.9
Year.....	10,125	1,887.2	1,739.0	.2	148.0
1936—January.....	10,182	57.2	45.6	-1.7	13.3
February.....	10,167	-15.5	-16.6	-9.5	10.6
March.....	10,184	17.2	5.5	1.0	10.7
April.....	10,225	41.0	28.1	-.2	13.1
May.....	10,402	176.7	170.0	-3.2	10.0
June.....	10,608	206.6	277.8	-24.8	-46.4
July.....	10,648	39.2	15.4	2.3	21.5
August.....	10,716	68.4	67.5	-11.9	12.9
September.....	10,845	129.0	171.8	-28.8	-14.0
October.....	11,045	199.7	218.8	-11.3	-7.9
November.....	11,184	139.5	75.8	3.0	60.7

¹ Gold released from earmark at Federal Reserve banks less gold placed under earmark (with allowance when necessary for changes in gold earmarked abroad for account of Federal Reserve banks).

² Figures are derived from preceding columns and indicate net result of such factors as domestic production, movements into and out of nonmonetary use or unreported holdings, imports and exports that do not affect gold stock during the month or year, and increment resulting from reduction in weight of gold dollar.

quired reserves and \$2,200,000,000 excess reserves. From the effective date of the 50 per cent increase in reserve requirements last August to the beginning of December total reserves of member banks increased by \$580,000,000. Of this increase \$160,000,000 has been absorbed by an increase in required reserves resulting from a growth in the member banks' deposit liabilities, and \$420,000,000 has been added to excess reserves of member banks throughout the country.

GOLD AND SILVER

In the three weeks from Dec. 2 to Dec. 23 excess reserves declined by about \$320,000,000 as a result of increases in money in circulation preceding Christmas and in balances of the Treasury at the Reserve banks, built up by quarterly income tax receipts and the sale for cash of new Treasury securities. This reduction in reserves, however, is temporary, since the return flow of currency from circulation after the Christmas holidays and disbursements by the Treasury out of its balances with the Reserve banks may be expected to build up member bank reserves in January, 1937 to a level at least as high as that at the beginning of December. The new Treasury policy of offsetting the effect of gold movements on reserves will prevent any further increase that might result from additional gold imports and purchases of domestic gold.

FACTORS AFFECTING VOLUME AND DISTRIBUTION OF EXCESS RESERVES

Growth of member bank reserves in the past three years has been due to gold imports of \$4,000,000,000, to gold acquired from domestic sources in the amount of \$500,000,000, and to \$800,000,000 of silver purchased by the Treasury against which silver certificates were issued. While gold imports have been the principal factor in the growth of the total volume of member bank reserves, other factors have widely distributed these reserves among the different groups of member banks and the different sections of the country. This distribution has been effected by the complex industrial, commercial, financial, and governmental transactions which involve the continuous shifting of funds among regions and among banks.

Gold imported into this country is sold to the Treasury and Treasury checks are drawn in payment for the gold or for the foreign exchange used to purchase it. These checks are drawn upon the Treasury's balances at the Federal Reserve banks, and become available to member banks, which deposit them at the Reserve banks and in exchange receive credits

to their reserve accounts. Reserve balances of member banks receiving Treasury checks are thereby increased. In the past the Treasury did not offset this increase but replenished its balances with the Reserve banks by giving the Reserve banks an equivalent credit in the gold-certificate account. Under the newly adopted Treasury policy the Treasury will segregate the gold and will replenish its balances at the Reserve banks by the sale of Treasury bills in the market. This operation will diminish member bank reserves, thus offsetting the previous increase.

Since most of the foreign exchange transactions take place in New York, the effect of gold imports on member bank reserves has been as a rule immediately reflected in additions to the reserves of New York City banks, but in time these reserves have become widely distributed among banks elsewhere. In some cases this transfer to other parts of the country may occur immediately after or even antedate the completion of the gold transaction. The foreign exchange used to obtain the gold may be obtained from an exporter, a foreigner purchasing securities in this country, or someone transferring a balance to this country, and this seller of exchange may deposit the funds or use them to make payments elsewhere than in New York. Thus reserves may be transferred from a New York City bank to a bank elsewhere before the gold is sold to the Treasury.

GOLD AND SILVER PURCHASES

The annual report of the Director of the Mint for the fiscal year ended June 30, 1936, has the following comments on purchases of gold and silver during the fiscal year 1936:

"Acquisitions of silver by the Government totaled 609,613,258 fine ounces at a total cost of \$395,313,736, an average of 64.8 cents per fine ounce. The open-market price in New York averaged 55.34 cents. The highest point on the open market was 70.062 cents, July 1, 1935; the lowest, was 45.062 cents January 20, 1936, a price maintained almost continuously during the remainder of the fiscal

DAILY STATEMENT OF THE UNITED STATES TREASURY, DECEMBER 31, 1936
CURRENT ASSETS AND LIABILITIES

GOLD		SILVER	
ASSETS	LIABILITIES	ASSETS	LIABILITIES
Gold.....\$11,257,581,562.82	Gold certificates: Outstanding (outside of Treasury).....\$2,910,465,119.00 Gold certificate fund—Board of Governors, Federal Reserve System.....6,036,425,937.68 Redemption fund—Federal Reserve notes.....12,741,005.85 Gold reserve.....156,039,430.93	Silver.....\$775,895,690.54 Silver dollars.....505,723,601.00	Silver certificates outstanding.....\$1,234,056,277.00 Treasury notes of 1890 outstanding.....1,174,472.00 Silver in general fund.....46,388,542.54
Total.....11,257,581,562.82	Note.—Reserve against \$346,681,016 of United States notes and \$1,174,472 of Treasury notes of 1890 outstanding. Treasury notes of 1890 are also secured by silver dollars in the Treasury. Exchange stabilization fund.....1,800,000,000.00	Total.....1,281,619,291.54	Total.....1,281,619,291.54
	Gold in general fund: Inactive.....\$26,498,144.23 Balance of increment resulting from reduction in weight of the gold dollar.....141,000,838.20 In working balance.....174,411,086.93		
	Total.....341,910,069.36		
	Total.....11,257,581,562.82		

GENERAL FUND

GOLD AND SILVER

ASSETS		LIABILITIES	
Gold (as above).....	\$ 341,910,069.36	Treasurer's checks outstanding.....	\$7,277,012.20
Silver (as above).....	46,388,542.54	Deposits of Government officers:	
United States notes.....	3,452,024.00	Post Office Department.....	2,752,184.57
Federal Reserve notes.....	18,051,185.00	Board of trustees, Postal Savings System:	
Federal Reserve bank notes.....	1,939,482.00	5-percent reserve, lawful money.....	60,800,000.00
National bank notes.....	1,767,784.50	Other deposits.....	28,013,449.97
Subsidiary silver coin.....	5,772,857.60	Postmasters, clerks of courts, disbursing officers, etc.	85,760,898.90
Minor coin.....	1,801,948.53	Deposits for:	
Silver bullion (cost value).....	346,834,582.58	Redemption of national bank notes (5-percent fund, lawful money).....	408,460.09
Silver bullion (recoinage value).....	346,346,565.06	Uncollected items, exchanges, etc.....	10,463,664.50
Unclassified—Collections, etc.....	2,902,648.21		
Deposits in:			
Federal Reserve banks.....	275,743,342.27	Balance today:	
Special depositaries account of sales of Government securities.....	988,859,000.00	Inactive gold (as above).....	\$26,498,144.23
National and other bank depositaries:		Increment on gold (as above)....	141,000,838.20
To credit of Treasurer United States.....	20,135,906.44	Seigniorage (silver) see note 1....	337,368,173.41
To credit of other Government officers.....	41,578,221.38	Working balance.....	1,401,083,657.49
Foreign depositaries:			
To credit of Treasurer United States.....	1,331,963.02		
To credit of other Government officers.....	1,333,058.25		
Philippine treasury:			
To credit of Treasurer United States.....	2,277,302.82		
Total.....	2,101,426,483.56	Total.....	2,101,426,483.56

XII. MINERAL INDUSTRIES

MINE PRODUCTION OF GOLD IN THE UNITED STATES, BY STATES, 1936

State or Territory	1935 Fine ounces	1936 Fine ounces	Increase (+) or decrease (-)		Value at \$35.00 per ounce	
			Fine ounces	Per- cent	1935	1936
Western States and Alaska						
Alaska.....	469,495	530,000	+60,505	+13	16,432,325	18,550,000
Arizona.....	241,755	310,000	+68,245	+28	8,461,425	10,850,000
California.....	890,430	1,049,600	+159,170	+18	31,165,050	36,736,000
Colorado.....	349,281	364,713	+15,432	+4	12,224,835	12,764,955
Idaho.....	83,823	80,000	-3,823	-5	2,933,805	2,800,000
Montana.....	151,088	179,000	+27,912	+18	5,288,080	6,265,000
Nevada.....	188,031	284,700	+96,669	+51	6,581,085	9,964,500
New Mexico...	33,435	33,298	-137	.....	1,170,225	1,165,430
Oregon.....	54,160	59,900	+5,740	+11	1,895,600	2,096,500
South Dakota..	567,230	590,679	+23,449	+4	19,853,050	20,673,765
Texas.....	518	675	+157	+30	18,130	23,625
Utah.....	184,838	224,500	+39,662	+21	6,469,330	7,857,500
Washington...	9,740	11,400	+1,660	+17	340,900	399,000
Wyoming.....	3,715	2,180	-1,535	-41	130,025	76,300
	3,227,539	3,720,645	+493,106	+15	112,963,865	130,222,575
Eastern States						
Alabama.....	2,227	4,361	+2,134	+96	77,945	152,635
Georgia.....	994	363	-631	-63	34,790	12,705
Maryland.....	.....	670	+670	.....	.....	23,450
North Carolina	2,176	1,942	-234	-11	76,160	67,970
Pennsylvania..	745	850	+105	+14	26,075	29,750
South Carolina	2,274	253	-2,021	-89	79,590	8,855
Tennessee....	423	383	-40	-9	14,805	13,405
Virginia.....	653	736	+83	+13	22,855	25,760
	9,492	9,558	+66	+1	332,220	334,530
Philippine Is ..	451,814	¹ 599,000	+147,186	+33	15,813,490	20,965,000
Puerto Rico...	64	70	+6	+9	2,240	2,450
	451,878	599,070	+147,192	+33	15,815,730	20,967,450
Total....	3,688,909	4,329,273	+640,364	+17	129,111,815	151,524,555

¹ Refinery receipts.

year. For newly-mined domestic silver the price of 77.57 cents a fine ounce, established by the President's proclamation of April 24, 1935, prevailed throughout the fiscal year.

Silver acquisitions included 48,784,-455 fine ounces newly-mined domestic at a cost of \$37,642,417; nationalized, 650,432 fine ounces, \$325,294; purchase act, 558,639,669 fine ounces, \$356,540,620; silver contained in gold bullion deposits, 411,925 fine ounces, \$222,207, and silver received in ex-

change for government-stamped bars, 1,126,757 fine ounces, \$583,198.

Gold acquisitions by the mints and assay offices during the fiscal year amounted to \$1,451,011,081.22. This included \$27,495.18 received at \$20.67 a fine ounce, representing gold not previously surrendered under the nationalization order. On the basis of the \$35 per fine ounce now being paid by the Federal Government for new gold acquisitions, the treasury profited by \$19,081.90 on the transaction."

GOLD AND SILVER

MINE PRODUCTION OF SILVER IN THE UNITED STATES, BY STATES AND REGIONS, 1935-36 (in terms of recovered metal.)

State or Territory	1935 (Fine ounces)	1936 (Fine ounces)	Increase (+) or decrease (-)		Value	
			Fine ounces	Per cent	1935 at \$0.71875 per ounce	1936 at \$0.77 per ounce
Western States and Alaska						
Alaska.....	286,848	454,000	+167,152	+58	206,172	349,580
Arizona.....	6,601,280	8,125,000	+1,523,720	+23	4,744,670	6,256,250
California.....	1,191,112	2,026,700	+835,588	+70	856,112	1,560,559
Colorado.....	4,696,064	5,814,119	+1,118,055	+24	3,375,296	4,476,872
Idaho.....	10,240,953	14,400,000	+4,159,047	+41	7,360,685	11,088,000
Montana.....	9,322,951	11,235,000	+1,912,049	+21	6,700,871	8,650,950
Nevada.....	4,393,426	4,970,000	+576,574	+13	3,157,775	3,826,900
New Mexico..	1,061,902	1,141,000	+79,098	+7	763,242	878,570
Oregon.....	110,385	83,800	-26,585	-24	79,339	64,526
South Dakota.	151,047	135,600	-15,447	-10	108,565	104,412
Texas.....	1,000,960	1,383,000	+382,040	+38	719,440	1,064,910
Utah.....	9,227,673	10,115,000	+887,327	+10	6,632,390	7,788,550
Washington...	52,338	58,000	+5,662	+11	37,618	44,660
Wyoming.....	1,152	1,217	+65	+6	828	937
	48,338,091	59,942,436	+11,604,345	+24	34,743,003	46,155,676
Eastern States						
Alabama.....	401	869	+468	+117	288	669
Georgia.....	74	18	-56	-76	53	14
Maryland.....	.....	33	+33	.....	.....	25
New York.....	21,750	18,250	-3,500	-16	15,633	14,052
North Carolina	7,584	8,850	+1,266	+17	5,451	6,814
Pennsylvania..	5,843	7,500	+1,657	+28	4,200	5,775
South Carolina	1,117	58	-1,059	-95	803	45
Tennessee.....	47,151	50,615	+3,464	+7	33,890	38,974
Virginia.....	55	75	+20	+36	39	58
	83,975	86,268	+2,293	+3	60,357	66,426
Central States						
Illinois.....	3,147	1,600	-1,547	-49	2,262	1,232
Michigan.....	4,219	.....	-4,219	-100	3,032	.....
Missouri.....	110,551	163,724	+53,173	+48	79,459	126,067
	117,917	165,324	+47,407	+40	84,753	127,299
Philippine Is..	322,022	1 473,000	+150,978	+47	231,453	364,210
Puerto Rico...	8	6	-2	-25	6	5
	322,030	473,006	+150,976	+47	231,459	364,215
Total....	48,862,013	60,667,034	+11,805,021	+24	35,119,572	46,713,616

¹ Refinery receipts.

XII. MINERAL INDUSTRIES

IRON AND STEEL

By EDWIN F. CONE

EDITOR, *Metals and Alloys*

GENERAL

The History of the American Steel Industry for 1936, when fully recorded, will relate the rapid progress of a remarkable recovery from the devastating depression which started in 1929. If reference is made to this review in the 1935 and 1934 editions of THE AMERICAN YEAR BOOK, it was stated then that 1934 showed a gradual recovery from 1933 and that 1935 told the same story, and it was added that substantial progress toward normal operations could probably be looked for in 1936. This probability has developed into an actual development. As 1936 closes operations of the steel industry were at levels close to 80 per cent of normal capacity.

COMPARATIVE PRODUCTION

The best picture of the trend in recovery of the steel industry is obtained from a study of statistics. These are reliably obtained from the American Iron and Steel Institute for steel ingots and from the trade papers for pig iron. The record for a number of years, with productions for 1936 partly estimated, is as follows in gross tons:

Year	Pig Iron	Steel
1936.....	31,310,000*	48,330,000*
1935.....	21,373,000	34,093,000
1934.....	16,139,000	26,055,000
1933.....	13,346,000	23,232,000
1932.....	8,781,000	13,681,000
1931.....	18,426,000	25,945,000
1930.....	31,752,000	40,699,000
1929.....	42,614,000	56,433,000
1921.....	16,688,000	19,783,000
1913.....	30,966,000	31,301,000
1898.....	11,774,000	8,930,000

* Partly estimated.

The most striking evidence of the recovery of the steel industry in 1936, shown by a study of these data, is that the estimated steel output last year of over 48,330,000 gross tons was

the largest since the boom year of 1929 when the total was 56,433,000 tons. This is a remarkable recovery and it contrasts with the low point of the depression of only 13,681,000 tons in 1932. The gradual recovery since then is evident from the table.

The recovery in pig iron is less spectacular but it is impressive—from only 8,781,000 tons in 1932 to 31,310,000 tons (estimated) in 1936. The increase over 1935 was about 50 per cent whereas for steel the corresponding increase was about 42 per cent.

THE OUTLOOK FOR STEEL DEMAND

Prospects are that, unless present and possible strikes interfere, the record for 1937 will surpass any previous totals in both pig iron and steel. The recovery now in progress and already accomplished has come, it is believed by many leading steel industrialists, in spite of the New Deal or any political consideration. The theory is adhered to that the depression was part of an economic cycle, that this low point was reached in 1932, that the upturn came soon after, and that it would have continued, in spite of any ordinary political happening. Others outside and in the industry take an opposite view. It is left for the reader to form his own opinion. In any event recovery has been established and prosperity is no longer "just around the corner"—it is in sight and discoverable.

THE AUTOMOBILE AS A RECOVERY FACTOR

It was stated a year ago that an important factor in this recovery, then believed to be in progress, was demand for automobiles. This continued to be the case in 1936. While that industry in 1935 had one of its best years in some time, 1936 was still better. In 1935 total automobile production made a gain of 44 per cent over 1934 while in 1936 there

IRON AND STEEL

was not so large an increase but there was a substantial gain of about 10 per cent over 1935, or about 400,000 units. Production in the United States and Canada in 1936 is estimated at 4,600,000 units compared with 4,182,491 units in 1935.

As the new year opened, the entire automobile industry was threatened with a prolonged and serious interruption by strikes against the General Motors Corporation. The history of this industry for 1937 may depend vitally on the outcome of this strike, engineered by Automobile Workers Union of America and the Committee for Industrial Organization of John L. Lewis.

ALLOY STEEL PRODUCTION

Data for alloy steel production in 1936 will not be available officially from the American Iron and Steel Institute until May or June, 1937. During 1936, however, data for 1935 were published and they revealed some interesting trends in this important branch of the American steel industry. The following table, compiled from official statistics of the A. I. and S. I., shows trend in recent years in gross tons:

Year	Total Alloy Steel	Per cent of Total Steel
1929.....	3,957,207	7.01
1930.....	2,443,311	6.00
1931.....	1,455,913	5.61
1932.....	798,604	5.54
1933.....	1,547,183	6.66
1934.....	1,612,275	6.19
1935.....	2,119,658	6.21

From these compilations it is evident that the demand for alloy steel abated but little during the depression. In percentage of the total steel production, the proportion of alloy steel sank to only 5.54 per cent in 1932 as against 7.01 per cent in 1929 and then advanced during 1932-1935 to 6.21 per cent. Indications are that in 1937 the demand for, and hence the production of, alloy steels will largely increase so that it would not be surprising if the total exceeded the nearly 4,000,000 tons in 1929.

STAINLESS STEELS

A very important branch of the alloy steel industry, one growing rapidly more in demand and in application, is the stainless steel. There has been ever since this branch was established only a few years ago, an insistent demand for statistics showing the American production of these steels, of which there are many types and analyses. Responding to this demand, the American Iron and Steel Institute in 1936 attempted the collection of output data and published the production figures for stainless steel ingots by analysis for 1934 and 1935 last year. These are as follows in gross tons:

Types	1934	1935
18% Cr and 8% Ni.....	19,777	24,711
12 to 14% Cr.....	8,902	13,232
16 to 18% Cr.....	8,077	12,837
All other high Cr and Cr-Ni Alloys.....	13,161	14,917
Totals.....	49,917	65,697

It is not stated whether these statistics include all producers. Data for 1936 and 1937 will doubtless reveal a decided increase because of the growing application of these steels for corrosion and heat-resisting conditions.

METALLURGICAL RESEARCH

General.—Research in metallurgy is continuous. Depressions have very little retarding effect. In 1936 the research laboratories of the steel companies, the non-ferrous organizations, and endowed or similar institutions were exceedingly active. To stipulate, however, in a brief review just what was accomplished is hardly possible. Much of the work is continuous and each year is mostly one of progress.

Low-Alloy, High Elastic Steels.—In this review for 1935 attention was called to a comparatively new development—the low-alloy, high-elastic steels. This class of steels comprise low-carbon steels in which are incorporated small percentages—the total usually not exceeding 4 to

XII. MINERAL INDUSTRIES

5 per cent—of alloying elements such as copper, nickel, chromium, silicon, molybdenum, vanadium, manganese and even phosphorus. The net result, as compared with ordinary carbon steel, is that there is made available a steel with which lighter structures can be built without loss of strength. For example, freight cars are being built of less weight than formerly and without sacrifice of strength, thus reducing the pay-load. The use of this type of steel is expanding very rapidly and their applications include—besides cars—ships, trucks, bridges, grab-buckets, tanks, aircraft carriers and so on. Many of the steel companies have entered this new field with the result that the following steels are on the market, sponsored by the companies indicated.

Steel Trade Name	Company
Cromansil.....	Electro Metallurgical Co.
Cor-Ten.....	U. S. Steel Corporation
Man-Ten.....	U. S. Steel Corporation
Sil-Ten.....	U. S. Steel Corporation
Yoloy.....	Youngstown Steel & Tube Co.
RDS-1.....	Republic Steel Corporation
RDS-1A.....	Republic Steel Corporation
Hi-Steel.....	Inland Steel Company
HT-50.....	American Rolling Mill Co.
AW70-90A.....	Alan Wood Steel Co.
AW70-90B.....	Alan Wood Steel Co.
Jal-Ten.....	Jones & Laughlin Steel Corp.
Gr. City 1....	Granite City Steel Co.
Gr. City 2....	Granite City Steel Co.
Centralloy....	Central Iron & Steel Co.
Konik.....	Continental Steel Corp.
Mayari R.....	Bethlehem Steel Co.

Besides these there are several others sponsored by alloy producing companies of which "Cromansil" is a type. These include the medium manganese steels, the carbon-molyb-

denum and manganese-molybdenum type, the manganese-vanadium compositions and so on.

At a symposium on "High-Strength Constructional Metals," conducted by the American Society for Testing Materials at its regional meeting in Pittsburgh, March 4, 1936, a paper on these steels was presented by Edwin F. Cone which should be consulted for further information.

Inductive Heat Treating.—A development of keen interest in the field of heat treatment of steel is the application by the Ohio Crankshaft Co., of Cleveland, of inductive heat for refining the structure of forged steel crankshafts, *i.e.* hardening the bearing surfaces. This was made public for the first time at the National Steel Exposition in Cleveland in October, 1936. By electric heat, induced by high frequency induction, on the unprotected surfaces of certain portions of crankshafts, followed by sudden quenching with water in a specially constructed apparatus, the hardening of the surfaces is quickly accomplished.

Copper and Phosphorus as Alloys.—During 1936 further progress was made in controverting the hitherto widely held theory that both copper and phosphorus are detrimental to steel, that they are nuisance elements. By research and practical demonstration, it was fairly well established that even phosphorus, in some of the low alloy steels in particular, can be efficiently employed as an alloy. In all these steels copper is present, up to 1 per cent.

COAL AND COKE

COAL AND COKE

By R. DAWSON HALL

ENGINEERING EDITOR, *Coal Age*

PRODUCTION

In the year 1936, the bituminous coal industry made a large advance in production, mechanization and preparation. As against an output of 369,324,000 short tons in 1935, 431,950,000 short tons were produced in 1936, an increase of 17 per cent. The figures for 1936 are preliminary only, but their significance is unmistakable, though some of the increase in production may be ascribed to a desire of the consumer to "play safe" as against the possibility of a nation-wide strike in 1937, and to a panicky fear that he will not be able to obtain coal in face of a car shortage. In that case it may be followed by a mild recession. However, much credit must be given to the revival of business.

Beehive coke, of which only 917,200 short tons were produced in 1935, increased in production to 1,812,600 tons in 1936, practically doubling. The plants under operation could meet no such load, and many ovens which had been idle almost a decade were put in condition for reoperation. Anthracite did not make such recovery, but, according to the U. S. Bureau of Mines' preliminary figures, it increased its tonnage from 52,159,000 short tons in 1935 to 54,760,000 short tons in 1936, an advance of 5 per cent. To this tonnage should be added about 4,000,000 short tons of illicit or stolen coal, of which the Bureau makes no estimate.

MINE LOADING

Taking the latest available figures, those released by the U. S. Bureau of Mines, Nov. 28, 1936, 47,206,000 short tons were loaded mechanically in underground bituminous mines in 1935, an increase of 186 per cent over the tonnage in 1927. Stripping, which may be regarded as a form of mechanical loading, produced 23,400,000 tons in the former year, an increase of 27 per cent over that of 1927. Hand

loading declined to 62 per cent of that in 1927.

As bituminous coal only rarely pitches enough to use gravity for loading and as almost all of it can be loaded mechanically to advantage, it is to be expected that in years to come the figure for hand loading will drop from 62 per cent almost to zero. Its present reduction is ascribable, however, not so much to the progress in machine loading and stripping as to the decline in production since 1927, the burden of which has fallen largely on hand-loading mines and places. In the bituminous mines, all forms of loading progressed in 1935 over 1934, but duckbills and other self-loading conveyors made the most progress—24.6 per cent—as against mobile loading machines, the most aggressive competitor—18.9 per cent.

For tonnage loaded mechanically in anthracite mines also no figures are available for 1936, but in 1935 9,279,000 short tons were loaded by machines working underground and 4,911,000 tons were loaded in open stripping pits. This compares with 34,335,000 tons still loaded into mine cars by chutes or by hand shoveling, showing that mechanical handling has still a long way to go, though it has progressed in anthracite mines to such an extent that, taking 100 as the index number of 1927, it was in 1935 no less than 417. Stripping has not made such progress, the increase in the same period (1927-1935 inclusive) was only 128 per cent; in fact, decreases may be expected because available areas become exhausted, though shovel capacities increase as to depth and volume handled, opening new areas to operation. Hand-loading underground has fallen significantly to 48 per cent of that in 1927, showing that on this form of mining has fallen the brunt of declining production.

It must be remembered, however, that all coal is rated as "mechanically loaded" if a mechanical device loads

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it into a mine car or into a conveyor that carries it to the breaker or tipple. In some cases the coal passes by hand shovel or gravity from the working face to a chute from which it falls into a conveyor by which, in turn, it is loaded into a car. This is termed mechanical loading even though the chute itself may be fed by hand. In other cases the coal is shoveled by hand into a conveyor, and the loading operation nevertheless is said to be mechanical. Pit-car loaders, moreover, are fed by hand shovel. Only where duckbills, scrapers or mobile loaders are provided to pick up the coal is it really mechanically loaded.

In anthracite mines, conveyors and pit-car loaders loaded 6,617,031 short tons, whereas scrapers and mobile loaders together loaded 2,662,026 tons, but the mobile loaders produced an insignificant tonnage. Scraper and mobile-loader coal production declined 11.8 per cent in 1935, pit-car loader coal production 4.9 per cent, whereas face-conveyor coal production increased 5.7 per cent.

Though, in 1924, W. M. Dake, then with the U. S. Coal Commission, advocated that coal be loaded by a mobile loader onto a conveyor which would convey it thence to tipple or breaker, until 1935 no mines had been thus equipped. The Goose Creek Mining Co., Garrett, Ky. has opened a mine of this kind which shipped its first coal, Dec. 1, 1935. Only the design of a low-type machine made this installation possible, for the coal at this mine ranges in thickness from 36 to 50 in. Only two producing places are worked at a time, and loading machine and undercutters are moved from one face to another. Each man employed at the mine, including outside employees and foreman, averaged 10.4 tons daily. Chain-and-flight conveyors are used at the face and along the room, and a belt in the main conveyorways. Supply tracks are laid in a heading adjacent to the conveyorway. Coal pillars in rooms are slabbed but not completely drawn. The past year has shown much activity in mechanical loading, which is

now accepted as the established way of handling coal underground.

CUTTING IMPROVEMENTS

Cutting improvements seem to center largely on better bits which will cut faster, use less power, reduce machine-repair costs, make coarser cuttings, reduce the quantity of explosive coal dust, and above all will save stopping machines so frequently for bit replacement. One method of making bits is by cutting them from a bar of alloyed steel with a tungsten-alloy cutter, cooling it concurrently so that the quality of the steel is not lost. This makes two points which can be reversed in the holder. Another is to provide for hard facing of bits. At Zeigler No. 2 mine, of the Bell & Zoller Coal & Mining Co., for instance, hard-facing equipment has been introduced so that the cost for labor and material in sharpening bits per ton of coal cut has been reduced to almost half of its previous value. A pound of the hard-facing material serves for 2,200 bits. As the mine produces 4,600 tons daily, such a reduction in cost makes an important saving.

FLOOD HAVOC IN MINES

Floods wrought much havoc in 1936, and in bituminous mines many deep-well pumps with a motor at the surface driving a centrifugal pump in the mine were installed for dewatering the workings. A severe flood, occurring March 20, caused the water from the Lackawanna River, an important tributary in the anthracite region, to make a breach in shallow workings of the old Hallstead colliery, flooding that mine, the Seneca, William A, No. 9 (Pittston) workings and, in part, other mines in the region between Pittston and Scranton, Pa. A little larger influx and a little lower barrier pillar between No. 9 and the Ewen mine, and a host of other collieries between that point and Wilkes-Barre, Pa., would have been in serious trouble.

As the companies affected could not profitably recover their properties and many men were laid idle, the State of Pennsylvania, to save relief

charges, undertook to provide pumps and power for dewatering. This work has permitted the recovery of Seneca and William A. collieries, but No. 9 is still idle. For the pumping, special centrifugal pumps of large capacity and suited for installation on slopes or shafts were designed.

MINE VENTILATION

New types of propeller fans have been devised and many installed. The main objection to these fans is the noise they make, as they are usually driven at four times the speed of the air leaving their blades. As few as four half blades are frequently provided, and some have only two. When the operating area of the mine gets larger or smaller—and this it is perpetually doing—the fans continue to give almost their initial efficiency, and if the change is too great it is easy and not costly to change the rotating parts, so that efficiency can be maintained. These fans will give increased pressure when they pass less air, so that if the mine resistance is increased by reducing the air delivered to certain splits, the higher pressure will increase the flow to a more resistant split which otherwise could not properly be ventilated.

CHANGING TRACK METHODS

Longer roads, shorter working hours and heavier equipment, all of which demand higher speeds of travel, are revolutionizing track methods, rails at some mines being joined at their ends by thermit or by welding. At the Valley Camp mine, the 75 lb. rails on main roads are cross-bonded by two pieces of 60-lb. rail welded to the underside of the track at each staggered rail joint, assuring stiffness and an adequate electric return. The 75-lb. rails are ground with a portable grinder where the weld is to be made.

MECHANICAL CLEANING

Statistics regarding progress in mechanical cleaning at bituminous mines in 1935 were released by the U. S. Bureau of Mines, Nov. 21, 1936. The tonnage of coal thus cleaned rose from 39,826,559 tons in 1934 to 45,361,021 tons in 1935. Mechanical

cleaning by wet methods at the mines increased 12.5 per cent and at central washeries operated by consumers 47.2 per cent, raising the total tonnage cleaned by wet methods 16.9 per cent. Coal cleaned by pneumatic methods increased 2.5 per cent, making the total advance in mechanical cleaning 13.9 per cent. Anthracite, large and small, is practically all mechanically cleaned, and solely by wet mechanical methods.

For many years Illinois was, with Alabama, a leading State in the washing of coal, but the work was done so imperfectly that it was discontinued. When better methods prevailed, Illinois was chary about reestablishing any modification of its former practice; yet it was generally known that, in this case, one swallow would mean a summer, and the swallow appeared. As soon as one company prepared to install a washer, others did the same, and competition will make all mines, at least all the big ones, introduce mechanical cleaning equipment. Washers and dry-cleaning plants are being introduced at mines in many parts of the country. Dedusting of coal is also making progress.

Retractile picking tables at the Wyoming (W. Va.) mine of Red Jacket Jr. Co., which can be ratcheted back and forth in the space provided under secondary and primary screens, bringing the front end back so that it will discharge into a mixing conveyor or to a breaker instead of to the loading boom, is a new and unusual arrangement. The use of an electric vibrating screen with spray nozzles for fine coal at the strip mine of the Enos Coal Co., where the coal is often too wet to be dedusted by dry methods, is another unusual procedure.

A mole of old rock-laden mine cars set in the Lackawanna River to form a settling harbor along the shore line with the harbor mouth down stream gave opportunity to the Kehoe-Berge breaker of obtaining partially clean water from a river running often 40 per cent solids. The harbor, of course, rapidly fills with silt and is cleaned by a mine scraper drawn by a hoist on the bank. Hydrated lime which re-

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fused to mix was put in the water on the intake side of the circulating pump; the preliminary agitation being followed by mixing in the pump impeller, complete neutralization was obtained.

At Talleydale plant of the Snow Hill Coal Corporation of Indiana, all the coal is mechanically cleaned, the larger coal being first broken by rotation and, falling on shelves, is screened until under 6-in. diameter. Material too large to go through the screen, after rotation and falling, goes to the rock bank. All the coal 6 in. and under is treated in a new type of jig with a butterfly valve that gives a pulsating upward flow of water through a screen under the coal bed, thus separating coal and impurity. The washing of 6-in. coal is an unusual practice; rarely is any coal washed which is over 4 in. in diameter. The finer coal at the Talleydale plant is cleaned dry by passing it over a riffled deck through which air passes that has been distributed by traversing a bed of marbles. Air streams remove the finest of the dust from coal of less than $\frac{3}{8}$ -in. diameter.

Cleaning of coal by a dense medium which will act, as does zinc chloride or bromoform in float-and-sink testing equipment and so will float the coal without upward movement of the medium in which the coal is to be floated, has been regarded as the ideal system of washing, provided the right medium can be found, not too expensive, not wasteful in use, and of the right specific gravity. Calcium chloride has long been used abroad, and it works well when the coal is of a low specific gravity or where a low specific gravity fraction of the original coal is sought. To wash nut and stove sizes the Buckeye Coal & Coke Co. and the Elkhorn Piney Coal Co. have put such chloride washers in service in which the solution is given a slight upward movement by impellers.

Anthracite, no matter how clean, is heavier than bituminous coal, especially that in the southern anthracite field. A heavier solution or more speed in the liquid, therefore, would be necessary to obtain the desired re-

sult. Such a fluid, not a solution, is said to have been found. The liquid separates impurities from clean coal and does not have to be impelled or agitated, but it must be operated in closed tanks.

A hot-vapor process for the oiling of coal has made rapid progress in many parts of the country, the purpose being to keep it free from dust. Hitherto oil has been used always as a liquid. The Old Ben Coal Corporation at West Frankfort, Ill. has installed equipment to mark with green, for identification, the product of some of its mines.

MERCURY-ARC RECTIFIERS

A 600-kw. mercury-arc rectifier has been installed by the Pittsburgh Coal Co. for converting alternating current at 2,300 volts to direct current at 550 volts, and another will soon be added. Another similar device, an Ignitron rectifier, will be installed by the Union Collieries Co. The return current will travel along the trolley wire at the Pittsburgh Coal Co.'s installations instead of the rail. Only one large unit has hitherto been in regular use at coal mines, and this was utility-operated. Two or more small units for minor work, however, are being used. These rectifiers perform work which would be done otherwise by motor-generator sets or rotary converters.

COAL "BOOTLEGGING"

"Bootlegging," which is the word in coal-mine lingo to express the mining and marketing of coal not owned or leased by the person mining it, has continued through the year. It is mostly confined to the Pennsylvania anthracite region. On Feb. 4, Governor Earle refused to curtail this activity until local authorities were ready to declare that they could not restrain it. These authorities failed to make that declaration, but made no attempt at restraint. On Aug. 7, a vigorous drive was made in the New York courts against those selling bootleg coal, the trucks being trailed from the bootleg pit holes and mines to the city. On Sept. 16 a New York grand jury besought the governor of New

COAL AND COKE

York State to memorialize the governor of Pennsylvania on the subject. Municipal authorities of Pennsylvania threatened to retaliate by levying taxes on New York trucks transporting merchandise through their towns.

LABOR MATTERS

At the 34th constitutional convention of the United Mine Workers of America, Jan. 28-Feb. 8, the union which represents 95 per cent of the mine workers declared for the reelection of President Roosevelt, but not for the Democratic party, and demanded provisions requiring greater unanimity of the U. S. Supreme Court in the exercise of veto powers. It gave the executive board broad authority to withhold payment of annual dues to the Federation of Labor. Membership was provided for men at coal-processing plants.

On May 8, after three months' negotiations, a new anthracite wage contract was made between the union and anthracite operators, effective April 30, 1936. As of May, 1937, miners were granted a 7-hr. day and 5-day week, but mines even then may be operated for six days a week in any 12 weeks of the year. Complete check-off was granted. Equalization of work in modified form was conceded, and district and international officers of the U. M. W. A. were made fully responsible if they failed to prevent strikes violative of the agreement.

The Guffey Bituminous Coal Stabilization Act was rejected by the U. S. Supreme Court on May 18, but two days later a similar bill, stripped of labor provisions and otherwise modified, was introduced in the Senate by Senator Guffey and referred to the Committee on Interstate Commerce. The bill was killed by a filibuster in the closing sessions of the 74th Congress, June 20, by Senator Holt of West Virginia and must await the next session. A committee of bituminous operators met at White Sulphur Springs, W. Va., Dec. 29. One participant wanted the new law to forbid the sale of coal at prices less than average cost which cost however must be such that operator's total cost will be covered by total income. An-

other would prohibit sale of coal at less than average cost in the district in which the coal is produced.

RESIDENTIAL COAL STOKERS

Sales of residential coal stokers during the first 11 months of 1936 totalled 70,814, an increase of 86.1 per cent over sales in the corresponding period of 1935 and 236 per cent over such sales the year before. Apartment-house and small commercial sales in the same period numbered 4,094, as against 2,881 during a similar period in 1935.

ANTHRACITE INDUSTRIES, INC.

A new agency, known as Anthracite Industries, Inc., was formed to promote by advertising the use of anthracite. It is expected that it will expend \$3,000,000 in three years. The Southern Experiment Station of the U. S. Bureau of Mines was opened at Tuscaloosa, Ala. May 26.

COAL DISTILLATION

A method of low-temperature distillation of coal using steam at 4-lb. pressure and 1200 deg. F. has been devised by E. H. Records and J. E. Louttitt to carbonize coal. The Coalene Co., operating under their patents, has erected at Tacoma, Wash. a four-retort unit which will carbonize 15 to 20 tons in 24 hr., making 1,300 lb. of char., 13 gal. of primary tar, 5,000 cu. ft. of 600-B.t.u. gas and 3 gal. of gas oil per ton of coal carbonized. Thermal efficiency is said to be 96.5 per cent. The Pittsburgh Coal Carbonization Co. (making Disco by a modified Wissner process) continued its operations. The Radiant Fuel Co. (using Knowles sole-flue ovens) tripled its capacity beginning early in 1936 and is carbonizing 300 tons daily. The Lehigh Briquetting Co. added to its carbonizing plant and will make yearly 60,000 to 70,000 tons of carbonized-lignite briquets, 15,000 tons of pitch and 600,000 gal. of creosote as soon as the additions are complete. At Fairfield, Ala. the Tennessee Coal, Iron & Railroad Co. is causing to be

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erected 134 by-product high-temperature coke ovens of Koppers type.

COAL AND COKE RESEARCH

During the year, Bituminous Coal Research, Inc., affiliate of the National Coal Association, got definitely at work, the actual research work being done by Pennsylvania State College and Battelle Memorial Institute. At State College, natural gas has been tried as a substitute for hydrogen in hydrogenation, and tetralin has been used as a dispersing agent in the coal mass prior to hydrogenation. Tests have been made as to the effects of pressure variations and of separating coal into its various fractions. It was found that fusain is oxidized at constant speed and other parts of the coal at a rate dependent on their concentration. Thus, the percentage of fusain can be determined. As fusain resists hydrogenation, the quantity of coal not completely converted under the most favorable conditions for hydrogenation is also a measure of the fusain plus the equally inert mineral matter present.

At Battelle Memorial Institute, it was made clear that the use of larger sizes of coal in a worm stoker is undesirable for the sizes are crushed by the worm, absorbing power. Shipment of mixed sizes also causes segregation which does not aid combustion. Underfeed stoker-fed furnaces develop coke trees or spires which break and topple into the furnace, but if they fall within the gas stream they are burned and are not undesirable. With regulation of air in retort tuyeres almost any good coal will burn satisfactorily whether strongly or weakly coking.

At the Alabama Polytechnic Institute, C. A. Basore determined that Alabama lignite distilled at low temperature made an inexpensive and fairly good decolorizing carbon. Also similar lignite preheated to 482 deg. C. can be briquetted without binder into a nearly smokeless fuel, though some lignite will briquet after a partial carbonization effected at a lower temperature. A bomb, announced F. H. Fish, Virginia Polytechnic Institute,

at the Pittsburgh meeting of the American Chemical Society, filled by hand with coal and heated to a temperature suited to that coal will form a briquet which is coated by the solidified material which exudes from the coal during its coking. This briquet has a compressive strength of 250 lb. per square inch and can be stored under water for three months without disintegration.

Tar distillate from the Lurgi ovens of the Lehigh Briquetting Co. reacts with formaldehyde, without addition of other catalysts than those present, and forms in 330 min. a resin resembling Bakelite. With stannic chloride pentahydrate the time is reduced to 2 min., with hydrochloric acid to 14 min. and with sodium carbonate to 25 min., according to W. Franta and I. Lavine, University of North Dakota (*I. & E. C.*, Jan., 1936, p. 119).

Pike's Peak lignite or sub-bituminous coal was found by F. W. Douglas, Colorado College, to carbonize almost completely between 500 and 600 deg. C. Almost all the moisture is driven off between 250 and 300 deg. C., and gas evolved is 80 to 90 per cent carbon dioxide. Nearly all the valuable gas leaves between 350 and 500 deg. C., but it is low in illuminants. The end product is powder (*I. & E. C.*, Feb., 1936, p. 219).

Sulphide of iron suddenly melts and runs at its melting temperature, but, as sulphide, it does not clinker the coal. However, the iron in it aids in making clinker, according to G. Thiessen, C. A. Bell and P. E. Grotts, Illinois Geological Survey (*I. & E. C.*, March, 1936, p. 355).

Heathcote's method (removal from coal of relatively inert bitumens by solution in pyridine, digestion of solid residue by potassium permanganate near boiling point and titration of filtrate and washings with sodium oxylate) was shown to give a permanganate number, in 30 cases from lignite to anthracite, markedly determinative of coal rank, according to H. L. Olin and W. Waterman, University of Iowa (*I. & E. C.*, Sept., 1936, p. 1024).

NON-FERROUS METALS

NON-FERROUS METALS

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GENERAL

It is a matter of observation that, when the general economic trend is downward, less construction is being done and oppositely when the economic trend is upward. In the present consideration it is immaterial whether this be construed as cause and effect or *vice versa*. What concerns us narrowly is that the metals find their chief use in construction, and their graphs fall substantially into the same slots as those of the general economic indices. The latter have been rising, more emphatically outside of the United States than inside of it, and the record of the non-ferrous metals conforms to the general trend and continued to do so through 1936.

This principle may be modified, however, by economies in unit use, or the substitution of one metal for another, which may happen naturally through competition or arbitrarily through governmental prescription. Thus, an important development in non-ferrous metals in 1936 was the extensive restriction of their use in Germany by governmental decree. Germany possesses but few copper and lead mines and practically no mine affording nickel and tin. The financial position of Germany has been such that her ability to import raw materials is crippled. Consequently the use of them must be limited to need for armament and for other purposes; substitutes must be employed, *e.g.*, iron pipe for brass pipe, aluminum wire for copper wire, and so on. Germany possesses ample supplies of zinc ore and consequently is able to make free use of that metal. Substantially the same condition exists in Italy, which has no copper mines and only a relatively small production of coal, iron, lead and zinc. Yugoslavia has ordered the erection of a copper refinery in order to have a production of refined shapes at

home. These observations illustrate the growing spirit of economic nationalism.

COPPER

The consumption of copper, in terms of new metal, ex-U.S.A., rose in 1935 to an aggregate of about 100,000 short tons per month. Through a composition among the principal foreign producers production was allocated among them, beginning a little prior to the middle of 1935, and the aggregate allowance, having been somewhat less than the rate of consumption, there began to be a gradual reduction of accumulated stocks.

The situation was similar in the United States, with the great difference that whereas the foreign consumption of copper had exceeded anything of prior record, domestic consumption although improving has remained far below the rate of 1929.

The history of 1936 was so much a continuation of that of 1935 that it may be summarized in few words. Consumption ex-U.S.A. continued to improve, although no longer by leaps and bounds. On top of a large and well-maintained consumption for industrial purposes, which was most noteworthy in Great Britain and Sweden, there was an additional demand for military armament which probably was exaggerated. The recent foreign wars in Manchuria and Ethiopia and the civil war in Spain do not appear to have required much copper. In respect of the armament programs, they were exhibited rather in providing manufacturing means than in actual ammunition, and it was, therefore, difficult to draw the line between industrial and military consumption. It will be different when Great Britain begins to rebuild her fleet, which has been recommended by a Royal Commission that pronounced for marine ships rather than aerial.

Anyway, the reduction in foreign

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accumulations of copper proceeded so far that beginning with August the producing quotients that governed the large mining companies, especially the Africans and Chileans, were repeatedly stepped up. It is worthy of remark that this situation has developed although countries like Italy and Germany that produce no copper, or only a little of it, have been doing their best to encourage the use of other metals which may be substituted for it.

In the United States there was a sharp improvement in copper consumption in 1936, which was collateral with the general revival in business. The total for the year, which may be forecasted only from data for the first nine months, may be about 725,000 tons, whereof 750,000 tons may be new copper and the remainder from the reconversion of old copper. It is unnecessary to speak of the production of mines, which have capacity in excess of any demand soon to be expected and stand ready to supply it. Domestic production emanates mainly from the three great groups—Anaconda, Kennecott and Phelps Dodge which, in 1935, furnished 72% of the total.

The increase in domestic consumption in 1936 occurred mainly in electrical manufactures, motor vehicles and building construction, all of which increased in volume. Refrigeration, broadly speaking, is an important channel of copper consumption, but air-conditioning does not swell quantitatively very much. Under the head of electric transmission lines (light, power and communication) consumption improved, but was still far below what it used to be and what is hoped it may be in 1937 and later.

The export price for copper f.o.b. New York refineries in January, 1936, was 8.36c., the domestic price being 9.03c. The export price, which is substantially the European price less 0.3c. per lb., rose steadily during the year, and about the middle the strength of the market was such that producers felt justified in ordering an increase in production, which proved to be no check on the market. The

domestic price also rose, but was held somewhat in check by some producers who feared an adverse effect upon consumption. When, in October, the foreign price rose above the domestic, an advance in the latter was practically constrained, for otherwise American producers could sell bar copper in the foreign market or American mills could undersell with manufactured products. At the end of December the price of copper was 12c. delivered in Connecticut and 12c. delivered at European ports. There has been a great speculation in copper in the foreign market and at the end of the year the outcome of it was uncertain.

LEAD

The events in the lead industry in 1936 were colorless. Outside of the United States the production, which in the main emanates from a few large companies operating in Canada, Australia, Burma, Mexico and Spain, was about stationary at the rate of 100,000 tons per month during the first half of the year, the rate being more or less adjusted by common understanding. This was about the same as the rate of production in 1935. It is not known what the rate of production in the second half of 1936 was owing to absence of Spanish statistics. Spanish production has probably been considerably curtailed owing to the civil war. In the other countries the monthly rate continued substantially unchanged. At the present time it may only be surmised that the total production ex-U.S.A. in 1936 will be a little less than in 1935, when it was about 1,200,000 tons.

Production in the United States, including some derivation from battery scrap, averaged about 35,000 tons per month, which was not very different from the average rate of 1935. Owing to the continued existence of large stocks of refined lead in this country (in the neighborhood of 200,000 tons) there was no incentive for increasing production which, of course, could easily have been done if desired.

NON-FERROUS METALS

Consumption ex-U.S.A. has been upward of 100,000 tons per month and so has furnished the great element of strength in the lead market. Continuance of electrification (using lead for cable covering) and continuance of housebuilding on a large scale, especially in Great Britain and Germany, contributed to the large foreign consumption of lead which is still used extensively in Europe for plumbing.

Consumption of lead in the United States was substantially in harmony with production in the first half of 1936, but in August there began to be a substantial increase in shipments which reduced the large accumulation of metal in stock. The consumption of lead in the United States has been for several years crippled by the diminished requirement for cable covering, both for public utility and telephone purposes, but there was some improvement under those heads in 1936.

At the beginning of 1936 the price for lead at London was £15.4. It ranged between £15 and £17 up to September when it rose to £18. The advance then probably reflected diminished Spanish supplies. In the fourth quarter the London price firmed still more and at the end of December it was £28½. The New York price was 4.5c. in January and February and 4.6c. in March-September. The domestic market became stronger in the fourth quarter, and at the end of December the quotation was 6c., New York. As in copper there has been a violent speculation in lead in the London market and the advance in price there forced up the price in the United States.

ZINC

The record of zinc in 1936 was more or less colorless, like that of lead. Several conferences among producers occurred in London to consider a revival of cartel, but it proved impossible to arrange any composition, the interests among producers being so diverse both organically and nationally. The present

production of zinc concentrates is derived to a large extent from the same ore that yields lead concentrates, and it is, therefore, difficult to regulate both of them according to market requirements. Several of the countries of Europe which are short of copper but possess a good deal of lead and zinc prefer to provide their own supplies rather than import any. So there has been a great zinc metallurgical development in Germany where the first unit of the new plant at Oker will come into operation at the end of the year.

The consumption of zinc in the United States was about 47,000 tons per month, substantially more than in 1935. There was increase in the use for brass making and galvanizing, and a large increase in the use for die-casting.

The price for zinc at London was £14.5 in January, rising to £16 in March and falling to £13.5 in August. Since then there has been a recovery to £16¼. The price for zinc at St. Louis was 4.85-4.90c. throughout 1936 up to November, being held at that level in order to avoid importations. During the most of the time the London price hovered near parity, freight and duty paid, and indeed small importations of foreign zinc into the United States did occur. The rise in the London price to £16¼ in November permitted the price at St. Louis to be raised to 5.05c. At the end of December the quotations were £20 London and 5.55c. St. Louis.

TIN

Tin production of the world continued under the control of the International Tin Committee, organized for the purpose of adjusting production to consumptive demand within a narrow range of price fluctuation. The increase in quotas of production in the latter part of 1935 raised the monthly rate of output to about 14,000 tons, which rate has been maintained during 1936 with a slightly increasing tendency. It is probable that the world's total for

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1936 will be about 175,000 tons, compared with about 147,000 in 1935. The increased production was absorbed into consumption without any substantial increase in stocks in first hands. However, there was nervousness, almost from the beginning of 1936, owing to the attitude of producers in Siam and the Belgian Congo which were strong adherents to the international convention and were ambitious for increasing their outputs.

This nervousness was exhibited in the market. The price for standard tin at London was about £225 through 1935 and for Straits tin at New York about 50c. In January, 1936, the price receded and continued to do so until August, when the monthly average was £183.7 at London and 42.6c. New York. This was followed by some recovery, but there was uneasiness as to whether the international convention would live or die. On Nov. 5 it was announced that the International Tin Committee had arrived at an agreement with the Siamese government whereby Siam became a party toward the renewal of the tin control. Upon this news the London price bounced up to £225 and the New York price to

about 50c. It is understood that the composition allows Siam to produce about 16,000 tons per annum, which is about 4,000 tons more than its recent rate.

On Nov. 11 the International Tin Committee announced that it had recommended raising production quotas 15% for the fourth quarter of 1936, retroactive to Oct. 1, which put Malaya, Netherland East Indies and Nigeria up to 105% of base rate and Bolivia at 90%. This caused further wild fluctuation in prices, which ran up to £245, equivalent to about 53.5c. and sunk to £225, equivalent to about 50c. At the end of December the market was about 51.7c, New York, and £233, London.

The tin situation has, of course, been helped by the broad economic improvement, which has contributed to the swelling of consumption of tin for plating, for solder, etc. The experience of 1936 demonstrated, however, the difficulty of even a governmental cartel in steering between the danger of inviting increased production from the outside, and on the other hand checking consumption by inducement toward the use of substitutes, and as to price stability there was no such thing.

PETROLEUM

By AXTELL J. BYLES

PRESIDENT, AMERICAN PETROLEUM INSTITUTE

INDUSTRIAL IMPROVEMENT

Progress and prosperity marked 1936 as one of the best of recent years in the petroleum industry. The demand curve of the industry's more important products continued its upswing at an accelerated rate. New all-time peaks were reached in crude oil production, refinery runs to stills, and motor fuel production and demand. The industry's statistical position, with continued reduction of crude oil stocks, was the most favorable in years. New discoveries were sufficient to offset depletion. Taxes also reached unprecedented heights.

CRUDE OIL

World and Domestic Output.—

World production of crude oil reached an estimated total of 1,772,600,000 barrels, an increase of eight per cent over that of 1935. Production in the United States accounted for approximately 62 per cent of the world total, or 1,092,600,000 barrels. This represented an increase of about 85,000,000 barrels over 1935, at the same time establishing a new peak. It exceeded the previous all-time high of 1929 by 8.5 per cent.

Exploring and Drilling Expansion.—With respect to total number of wells drilled, 1936 was the most

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PRODUCTION OF CRUDE PETROLEUM

(In Barrels of 42 Gallons)

	United States	Rest of World	Total World
1931.....	851,081,000	522,575,000	1,373,656,000
1932.....	785,159,000	524,585,000	1,309,744,000
1933.....	905,656,000	536,456,000	1,442,112,000
1934.....	908,065,000	614,178,000	1,522,243,000
1935.....	993,942,000	648,394,000	1,642,336,000
1936 (estimated).....	1,092,600,000	680,000,000	1,772,600,000

active year since 1920. An estimated 25,400 wells were completed. Of greater satisfaction and significance to the industry, however, was the fact that the ratio of "dry holes" (non-productive wells) to total wells drilled was the lowest in years, having declined to about 20 per cent from 30 per cent in 1929. This gratifying development was ascribed at least in part to the industry's progress in the science of prospecting and development.

The search for more oil contributed important additions to the nation's reserves. These included the Old River field in California, producing from below 7,800 feet, and new fields,

extensions of old fields, and new producing horizons in Eastern Texas, Southwest Texas, and the Texas Gulf Coast, as well as from Oklahoma, New Mexico, and Kansas.

Storage.—The satisfactory progress made by the industry in 1935 in reducing crude oil stocks was continued in 1936, despite an unprecedented level of production. Stocks at the end of the year were estimated at 288,000,000 barrels, which is lower than at any time since 1922. Stocks were 145,500,000 barrels below the all-time peak reached October 31, 1929, and down 26,631,000 barrels from the end of 1935.

WELLS COMPLETED IN THE UNITED STATES

	Oil	Gas	Dry	Total
1931.....	6,788	1,985	3,659	12,432
1932.....	10,429	1,043	3,569	15,041
1933.....	8,073	923	3,318	12,314
1934.....	12,520	1,368	4,309	18,197
1935.....	15,108	1,401	4,911	21,420
1936 (est.).....	18,250	2,000	5,150	25,400

CRUDE OIL IN STORAGE AT END OF YEAR

(in barrels of 42 gallons)

1931.....	370,919,000
1932.....	339,715,000
1933.....	355,312,000
1934.....	337,254,000
1935.....	314,631,000
1936 (est.).....	288,000,000

of crude oil were double those of 1931.

FOREIGN TRADE IN UNITED STATES CRUDE PETROLEUM

(in barrels of 42 gallons)

	Imports	Exports
1931.....	47,250,000	25,535,000
1932.....	44,682,000	27,393,000
1933.....	31,893,000	36,584,000
1934.....	35,558,000	41,127,000
1935.....	32,239,000	51,378,000
1936 (est.).....	32,000,000	50,500,000

Foreign Trade.—Changes both in imports and exports of crude petroleum were not sufficiently significant to indicate any reversal of trends. At 32,000,000 barrels, imports were off slightly more than 200,000 barrels. Exports lagged behind those of 1935 by some 878,000 barrels. At 50,500,000 barrels, the 1936 exports

Prices.—The \$1.00 per barrel crude oil price level reached Sept. 29, 1933, continued until Jan. 9, 1936, when

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prices for basic grades were posted at \$1.10.

CRUDE OIL PRICES

(per barrel of 36° A.P.I. gravity
Mid-Continent oil)

	High	Low
1931.....	\$.95	\$.33
1932.....	.92	.69
1933.....	1.00	.25
1934.....	1.00	1.00
1935.....	1.00	1.00
1936.....	1.10	1.00 (Jan. 1)

REFINING

Volume.—A growing demand for refined products, especially motor fuel and fuel oil, brought with it a new peak in refinery activity as measured by crude runs to stills. The previous all-time high in crude runs established in 1929, was exceeded by 17.7 per cent. The estimated total of crude runs was 1,063,000,000 barrels. This was virtually 100,000,000 barrels greater than the 1935 total.

CRUDE OIL RUNS TO STILLs

(in barrels of 42 gallons)

1931.....	894,608,000
1932.....	819,997,000
1933.....	861,254,000
1934.....	895,636,000
1935.....	966,243,000
1936 (est.).....	1,063,000,000

Motor Fuel.—In order to meet a steadily rising demand for motor fuel occasioned both by increased motor vehicle registrations and greater motoring activity, refineries stepped up their output to an all-time high. At 504,000,000 barrels, motor fuel production exceeded that of 1935 by 10 per cent. Total domestic consumption of gasoline, estimated at 20,118,000,000 gallons, exceeded the 1935 peak demand by better than 10 per cent. The motor fuel consumed in 1936 had a retail value of approximately \$2,840,000,000. Its sale produced more than one-third of its dollar value in retail sales tax revenues of Federal and state governments.

MOTOR FUEL PRODUCED IN UNITED STATES REFINERIES

(in barrels of 42 gallons)

1931.....	431,510,000
1932.....	392,623,000
1933.....	401,591,000
1934.....	416,932,000
1935.....	457,692,000
1936 (est.).....	504,000,000

Refinery Operation.—The number of refineries in operation is estimated at 425 as of January 1, 1937, and remains virtually unchanged from 1935. While 1936 activity along the line of refinery construction was heavy, the work was largely in the way of modernization of obsolete plants and equipment. Technical progress in the refining industry is so rapid that the petroleum refining industry has one of the highest obsolescence rates to be found in the business world.

REFINERIES IN OPERATION IN UNITED STATES

January 1, 1931.....	346
January 1, 1932.....	365
January 1, 1933.....	372
January 1, 1934.....	454
January 1, 1935.....	435
January 1, 1936.....	422
January 1, 1937 (est.).....	425

Refined Products.—Refined products, other than motor fuel, generally were produced in greater volume due to a uniformly higher demand. Output of gas and fuel oil was at the highest level since 1929, with production totalling 405,000,000 barrels, or 14 per cent above that of 1935. Output of kerosene, lubricants, waxes, asphalts, road oils, and miscellaneous commodities also increased.

GAS AND FUEL OIL PRODUCED IN UNITED STATES REFINERIES

(in barrels of 42 gallons)

1931.....	336,967,000
1932.....	294,750,000
1933.....	316,439,000
1934.....	335,353,000
1935.....	355,125,000
1936 (est.).....	405,000,000

Foreign Trade.—Exports of refined products registered a small gain over 1935, the estimated total of 78,500,000 barrels representing an in-

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crease of about three per cent. Imports also showed a small increase.

FOREIGN TRADE IN REFINED PETROLEUM PRODUCTS (in barrels of 42 gallons)

	Exports	Imports
1931.....	98,338,000	38,837,000
1932.....	75,805,000	29,812,000
1933.....	69,942,000	13,501,000
1934.....	73,149,000	14,936,000
1935.....	76,423,000	20,437,000
1936 (est.).....	78,500,000	25,000,000

MARKETING

Increased Demand.—The industry's nearly 200,000 service stations were able to satisfy the greatest motor fuel consumption in history without interruption either in service or supply. Peak demand failed to produce any extensive rises in the price of gasoline, and motorists continued to pay less than one-half the 1920 price for an infinitely better motor fuel. Taxes, however, absorbed a substantial part of the saving. Fuel oil demand was at the highest level in at least seven years, due in part to more extensive use of this product as a source of home and industrial heat.

MOTOR FUEL DEMAND (in barrels of 42 gallons)

	Domestic Demand	Total Demand
1931.....	407,843,000	453,559,000
1932.....	377,791,000	413,229,000
1933.....	380,494,000	409,815,000
1934.....	410,339,000	435,025,000
1935.....	434,897,000	465,277,000
1936 (est.).....	479,000,000	507,000,000

GAS AND FUEL OIL DEMAND (in barrels of 42 gallons)

	Domestic Demand	Total Demand
1931.....	334,668,000	363,899,000
1932.....	308,157,000	328,151,000
1933.....	323,705,000	344,268,000
1934.....	340,371,000	368,976,000
1935.....	366,586,000	395,075,000
1936 (est.).....	410,000,000	443,500,000

ESTIMATED NUMBER OF OIL BURNERS IN OPERATION

End of Year	Industrial	Domestic	Total
1931.....	20,000	760,800	780,800
1932.....	25,700	843,200	868,900
1933.....	34,200	920,300	954,500
1934.....	47,100	1,014,100	1,061,200
1935.....	60,600	1,154,700	1,215,300
1936 (est.).....	77,500	1,352,700	1,430,200

Prices.—Prices of petroleum products, as measured by the U. S. Bureau of Labor Statistics wholesale price index, were about 42.5 per cent below normal. This is in contrast with the index for all commodities which has advanced to within about 18 per cent of normal. This relationship between petroleum prices and prices of other commodities has obtained for years.

INDEX OF WHOLESALE PRICES (1926=100)

(U. S. Bureau of Labor Statistics)

	Petroleum Products	All Commodities
1935 September.....	50.6	80.7
October.....	50.1	80.5
November.....	52.5	80.6
December.....	52.8	80.9
1936 January.....	54.4	80.6
February.....	55.7	80.6
March.....	56.0	79.6
April.....	57.9	79.7
May.....	58.2	78.6
June.....	57.7	79.2
July.....	58.1	80.5
August.....	57.9	81.6
September.....	57.5	81.6

MOTOR FUEL PRICES, TAXES AND COSTS

Year	Average Retail Price	State and Federal Taxes	Average Total Cost per Gallon to the Consumer
1931.....	\$.1300	\$.0400	\$.1700
1932.....	.1330	.0463	.1793
1933.....	.1241	.0541	.1782
1934.....	.1364	.0520	.1884
1935.....	.1355	.0529	.1884
1936 (10 months).....	.1411	.0535	.1946

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In the statistically "normal" year of 1926, U. S. motorists were paying an average of 20 cents per gallon for their gasoline. The average price for 1936 is estimated at 14.11 cents, exclusive of taxes, which is more than

25 per cent below "normal." State and Federal sales taxes on gasoline now average nearly 40 per cent upon the retail price of the product and about 100 per cent of its wholesale price.

GASOLINE TAXES PAID BY CONSUMERS

	State	Federal	Total
1932.....	\$513,047,239	\$ 62,839,827	\$575,887,066
1933.....	518,195,712	181,125,988	699,321,700
1934.....	565,027,000	170,109,269	735,136,269
1935.....	616,851,671	172,262,481	789,114,152
1936 (est.).....	685,000,000	190,000,000	875,000,000

How the individual consumer who uses approximately 600 gallons of gasoline annually is affected by taxes on this product is shown in the table which follows. In 1925 he had to pay \$120.54 for 600 gallons of gasoline, and an additional \$12.66, or about 10 per cent, for taxes. In 1935 his gasoline bill had decreased about 30 per cent to \$84.66, but taxes had trebled.

ESTIMATED ANNUAL COST OF MOTOR FUEL AND TAXES PER CONSUMER

(Based upon the use of 600 gallons annual consumption and average tax rate)

	Cost of Fuel	Cost of Taxes
1925.....	\$120.54	\$12.66
1929.....	107.52	21.00
1935.....	81.30	31.74
*1936.....	84.66	32.10

* On basis of first ten (10) months prices.

Service Station Census.—Preliminary reports of a census of retail business, taken in 1935 and including service stations, were published late in 1936 by the U. S. Bureau of the Census. These reports indicated that 196,649 service stations accounted for \$6 of every \$100 worth of retail business transacted in the United States, and provided jobs for 381,422 workers, including active proprietors. Service station employment increased 16 per cent over 1933, or twice the increase for retail business generally.

TAXES AND EARNINGS

The census data permitted an interesting comparison to be made with revenues from Federal and state sales taxes collected at service stations. The comparison indicated that nearly one-third of service station gross receipts constitute taxes. Whereas total 1935 sales, exclusive of taxes, were reported by the census as \$1,961,780,000, the tax reports showed that Federal sales taxes upon gasoline and lubricating oil and state sales taxes upon gasoline totalled \$806,118,000. Whereas the average volume of business per station was \$9,990 per year, tax collections per station averaged \$4,105 per year. It was estimated that each service station worker functioning as an unpaid Federal and state collector of sales taxes, collected an average of \$2,106 in revenues on motor fuels and lubricants alone.

Estimates indicate that the industry's total 1936 tax burden made a percentage gain which will outstrip gains made by the industry in other respects. Including gasoline taxes, the industry's total tax bill in 1935 was \$1,127,259,232, or about the same as the annual payroll. In the 15-year period 1921 through 1935 taxes totalled \$8,035,202,125, or nearly four times the net earnings of \$2,123,440,000. The average investment for the period was \$10,510,283,066. Net earnings averaged \$141,562,667, or 1.35 per cent. There are now 201 types of petroleum taxes, of which 39 are Federal, 121 are state, and 41 are county, city, or local.

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ESTIMATED PETROLEUM INDUSTRY EARNINGS AND TAXES

	Investment	Net Earnings	Per Cent Earned	Tax Total
1930.....	\$12,000,000,000	\$ 92,439,088	0.77	\$ 670,606,663
1931.....	12,100,000,000	333,903,133 deficit	-2.76	684,777,687
1932.....	12,200,000,000	162,000,000 deficit	-1.33	747,097,125
1933.....	12,000,000,000	123,000,000 deficit	-1.03	1,004,824,028
1934.....	12,000,000,000	59,000,000	0.49	1,046,149,575
1935.....	13,276,000,000	173,000,000	1.30	1,127,259,232

MISCELLANEOUS

Interstate Compact.—The compact between the several oil-producing States to prevent physical waste in the production of petroleum was operative throughout the year. Practices which tended to make for inefficiency in crude producing were corrected with the cooperation of the industry, and as a result waste was held at a minimum.

Research and Conservation.—Expenditures for scientific research looking toward still greater improvements in both quality and availability of its products continued to be a major item of the budget of the industry as a whole. It is estimated that about \$12,000,000 thus was spent in 1936. The nation as a whole and every individual consumer of petroleum products is benefiting by such research. The cracking process, which has doubled the amount of gasoline obtainable from a barrel of crude oil, in one year alone is estimated to have reduced by a full 1,000,000,000 barrels the amount of crude oil needed to meet demand for motor fuel. Since 1920 it is estimated that the cracking process has conserved about 8,000,000,000 barrels of crude oil. Polymerization, a process which produces gasoline from gases released in refining operations, continued to make progress. Polymerization units

now in operation, under construction, or contemplated, will conserve an estimated 53,000,000 barrels of crude oil annually once they are in operation. Research also has found ways to produce a host of chemical products from the treatment of cracked materials. These include resins, rubber substitutes, ethers, alcohols, glycols, acids, aldehydes, pickling agents, acetylene, sulfuric acids, etc.

The Iowa Plan.—Of special interest in the marketing division of the industry during 1936 was the rapid spread of the so-called "Iowa Plan." Faced with prohibitive chain store tax legislation in several States, refiners operating retail outlets were forced to withdraw from retail marketing. This was accomplished by leasing the outlets to individuals to be operated by them as independent enterprises.

Employment and Payrolls.—The number of workers on the industry's payroll is estimated at roundly 1,000,000. Recent census figures show that employment in service stations alone increased 16 per cent over 1933. U. S. Bureau of Labor Statistics indexes show petroleum workers to be among the best paid in all industry. Their combined pay envelope for the year 1936 was estimated at \$1,500,000,000.

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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. OF PETROLEUM GEOLOGISTS, Box 1852, Tulsa Okla.	AMERICAN MINING CONGRESS, 841 Munsey Bldg., Washington, D. C.
AMERICAN GAS ASSN., 420 Lexington Ave., New York City.	AMERICAN PETROLEUM INSTITUTE, 50 West 50th St., New York City.
AMERICAN INSTITUTE OF MINING & METALLURGICAL ENGINEERING, 29 W. 39th Street, New York City.	AMERICAN PETROLEUM INDUSTRIES COMMITTEE, 50 West 50th Street, New York City.
AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.	AMERICAN ZINC INSTITUTE, 60 E. 42nd Street, New York City.

DIVISION XIII

MANUFACTURES AND TRANSPORTATION

CONDITIONS IN MANUFACTURING

By L. SETH SCHNITMAN

CHIEF STATISTICIAN, F. W. DODGE CORPORATION

GENERAL

Industrial recovery became a reality in 1936. No matter what the measure, production attained to a higher level of activity than in any other recent year. In this accomplishment, many branches of industry marked their fourth year of recovery; some even exceeded previous peaks. Plants, long idle, opened for the first time in several years. Industries, long depressed, took on renewed vigor. The newer industries gained added stimulus from the recovery forces. Durable goods shared more equitably the industrial honors enjoyed first by the consumption goods lines. The extractive industries, too, showed a much larger activity.

Whatever else may be said to the causes for the improvement, one thing stands out in bold relief: the year 1936, of all the years since 1932, was least subject to politico-mechanisms, and most reflective of basic adjustment in underlying forces. Even in agriculture, a devastating drought lent further evidence, were any needed, that natural forces are immutable, that economic pressures may be retarded or accelerated by fiat but seldom, if ever, fundamentally altered.

Industrial gains, great as they have been, have not, however, materially reduced unemployment. Here is a real dilemma. Though the evidence is by no means conclusive, the scourge of abnormal unemployment is partly traceable to the fact that apparently large-scale work-relief has been made

a matter of permanent Federal concern on a basis that is fairly attractive to the marginal wage-earner.

LABOR FACTORS IN INDUSTRIAL RECOVERY

Industrial production now enters its fifth year of recovery. With some 3,000,000 workers still engaged on Federal WPA projects and with an additional third of a million youths in the Civilian Conservation Corps, the figure of perhaps eight or nine millions of unemployed workers takes on a new significance. Partial respite from Federal industrial controls was afforded by the judiciary in 1935. With unemployment still large, this "breathing spell," seems now to have come to an end. The pressure for shorter hours and higher unit wages is becoming more urgent but it is well to remember that legislation on these items may be no more successful in the reduction of unemployment than was the NIRA.

As in the 1920's the productive gains in 1936 rested heavily upon the industrial trinity—automobiles, construction and steel. But, by the year-end, these industries had become increasingly restive, especially automobiles and steel. Labor disputes and threats of trouble generally were becoming more serious and widespread. The "sitdown" serves to epitomize the streamlining that has occurred in the strike weapon. A wide-open split in the ranks of organized labor with the establishment of the Committee

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for Industrial Organization headed by John L. Lewis, served to fan the flames of labor discord. Once again the age-old contest between crafts and industry unions was thrown into the open.

Despite gathering labor clouds, with labor disturbances as widespread at least as in 1922, the year 1937 will probably show a higher productive volume than was recorded for 1936. As to this there can be very little doubt. That industrial profits as a whole will keep pace with the quantitative productive gains indicated for industry is dubious, however. What is even more dubious is the question of real wage-incomes, since evidences are many that the cost of living will be sizably greater than it has been in any recent year. The National income in dollars should continue its rise but it is not likely to be more than 10 per cent better than the figure of \$60,000,000,000 indicated for 1936.

Though the year ended with an unparalleled number of bonus distributions and wage increases by hundreds of companies, paradoxically this, too, points to larger labor strife than has been witnessed in many years.

This is the heritage for 1937—one which will test the ingenuity of government, for now the government's stake in the recovery movement looms larger than ever, what with the unexampled results of the national election and the promises of a balanced budget, decreasing emergency expenditures and the benefits of social legislation.

INDUSTRIAL PRODUCTION

The physical volume of industrial production during 1936, covering both manufacturing and mining, was almost 16 per cent greater than it was in 1935. Measured by the weighted index of the Federal Reserve Board, the 1935 production volume stood at 105 based upon the 1923-1925 monthly averages as 100. This marked a recovery of about 64 per cent from the depression low for 1932 and is the highest annual index since 1929 when the index was 119. No allowances have been made for population

growth in the interim but it appears of interest to indicate that the 1936 index stands at about the 1925 annual level, though wholesale prices in general were then about 25 per cent higher than they are today. The *Annalist* index, which takes account of population growth, shows industry to have been within less than 2 per cent of normal for 1936 as a whole and the final month 7 per cent above normal.

Of more significance perhaps, are these items gleaned from the Federal Reserve Board Index: (1) the monthly indices after adjustment for seasonal influences during the first quarter of 1936 trended downward; (2) the monthly indices for the final three quarters trended upward, attaining their highest level in December at 115 per cent of the monthly average for the base period, 1923-25; (3) not since October, 1929 has an index as high as that for December, 1936 been recorded; (4) that in its monthly movements the indices for the year 1936 were more like the 1926 and 1928 indices than for any other year except that both comparative years had annual indices somewhat higher than that shown for 1936; (5) that both for 1927 and 1929 the indices averaged, for the latter half of the years in question, were lower than the averages for their respective first half-years; (6) that 1937 may follow the general pattern of 1927 when the range between monthly high and monthly low was only 9 index points and where each month of the year was above 100—for 1936 the range between high and low was 22 index points, with only the nine final months at 100 or over.

For manufacturing production alone, as differentiated from mining, the Federal Reserve Board Index for 1936 stood at 105 based on the 1923-25 averages as 100. This was a gain of almost 17 per cent over the figure for the previous year. For mining production alone, the 1936 index was 104 and represented a gain of about 14 per cent over the figure for 1935.

Of all the industries included in the index, automobiles, plate glass, iron and steel, leather and shoes,

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petroleum products, rubber tires and tubes, textiles and tobacco manufactures were produced in larger volume than in the 1923-25 base period. For plate glass and petroleum products the gains over the base period were the most spectacular. For cement, lumber and food products the 1936 outturns were lower than their average annual outputs for the years, 1923-25.

Of the industries included in the mining index, only crude petroleum showed larger output in 1936 than was indicated for the base period. For coal, both anthracite and bituminous, and lead the 1936 outputs were substantially below their average respective annual volumes for the years, 1923-25.

IRON AND STEEL

The production of pig iron during 1936 approximated 30,600,000 tons as contrasted with only about 21,000,000 tons for 1935, less than 16,000,000 tons in 1934 and more than 42,000,000 tons for 1929. Prices for scrap steel, a much more useful measure of industrial recovery than pig iron output, came within striking distance of 1929 levels during late 1936. At the 1936 year-end more pig iron furnaces at larger capacity were in blast than at either the 1935 or the 1929 year-end. Steel ingot production attained a level of more than 47,000,000 tons in 1936 as against only 33,900,000 tons for 1935 and upwards of 54,000,000 tons in 1929. The year 1936 ended with the steel industry operating at about 80 per cent of theoretical capacity and almost full practical capacity if allowance is made for obsolescent plant capacities. In fact, steel mills really found themselves hard put toward the year-end to fill orders after the posting of important price advances.

The automobile industry continued to hold the position of prime significance as a steel consumer, but its ratio of consumption to the total, 21 per cent, showed a sizable shrinkage from the 24 per cent recorded for 1935. Building construction accounted for about 14 per cent of steel consumption while third rank in the

steel consuming world went in 1936 to the railroad industry with about 8.5 per cent of the total. The improvement in the importance of railroad buying was particularly noteworthy and promises to continue into 1937.

Though the 1936 steel production volume was the third largest on record, being exceeded only in 1928 and 1929, steel company earnings did not increase in like proportion, largely because of impressive wage increases to labor.

Modernization of the steel industry was continued in 1936 with considerable new capacity added in finishing mills. Domestic production of iron and steel in 1936 was not stimulated to any important degree by the race of armaments as was the case in Europe, but 1937 seems destined to give greater emphasis to armaments as a factor in domestic steel demand than in any other year since the war.

AUTOMOBILE PRODUCTION

A total of about 4,600,000 units was produced by automobile and truck manufacturers, in 1936; this was a gain of almost 12 per cent over the figure for 1935. The 1936 output of cars and trucks was 122 per cent greater than in 1932, the depression low, and was greater than for any other year except 1929 when the factory outturn was more than 5,350,000 units.

Of the 1936 total, passenger cars amounted to about 3,600,000 units while trucks totaled about 1,000,000. Comparable figures for 1935 showed 3,286,000 passenger cars and 724,000 trucks. In this connection it is of more than passing moment to indicate that the 1936 output of trucks exceeded the 1929 volume of 771,020. Small wonder that the railroad industry has found in the motor truck a really formidable competition.

As 1936 ended, headlines proclaimed "30,000 MEN ARE IDLE; 'SIT-DOWN' STRIKES CLOSE 7 GENERAL MOTOR PLANTS"; "AUTO UNIONS OF 10 CITIES TO JOIN FORCES"; "WASHINGTON OBSERVERS FEAR A GREAT LABOR CRISIS IF AUTO TIE-UP SPREADS"; etc. As a result production schedules of manu-

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facturers in the final week were on a lower level than earlier in the month despite continued large consumer demand directly traceable to an expanding national income.

Contraction in the automobile industry was induced by strikes in parts and plate glass factories which, at the year-end, too, were much less active. Some way doubtless will be found to settle the mounting labor troubles. In this settlement, the government is likely to have a larger hand than ever before, with arbitration—voluntary or even compulsory—under governmental aegis not an improbability.

That 1937 inherits a bad labor problem in the automotive and related lines there can be no doubt but that this is likely to result in any substantial curtailment in production for 1937 is not probable. What is more probable is a reduction of industry profits which for 1936 were somewhat reminiscent of 1929; even so, fewer companies in 1936 shared the profits than in the peak production year.

CHEMICALS

The key chemical industry gave an excellent account of itself in 1936. Sulphuric acid production was greater than in the previous year. Alcohol output, both ethyl and denatured, did not share the general gains, but explosives, in large part because of construction industry demands showed a much heavier volume of shipments than in 1935. Production of synthetic methanol showed an important increase, too, while the output of superphosphates for fertilizer usage participated in the better demand for chemicals. Production and shipments of nitro-cellulose increased and cellulose acetate production and shipments likewise expanded in 1936. Expanding markets were found for plastics generally, while the importance of the soy bean as a source of raw material for plastics was firmly established—if there ever had been doubt—by the action of an automobile manufacturer who, during the year, constructed a \$5,000,000 soy bean processing plant.

PETROLEUM AND REFINERY PRODUCTS

The petroleum industry in 1936 broke all production records. With a volume in excess of 1,000,000,000 barrels the 1936 output exceeded the production in 1929, the peak year. The consumption of all classes of petroleum products exceeded the 1935 volume by about 10 per cent. What is even more important, 1936 marked further substantial gains in the reduction of previously unwieldy stocks of both crude and refined products with the result that the inventory position is lower now than at any time in years; there is no need to fear a shortage, however. In the refining end of the industry considerable gains have been made on the technical side with the result that more efficient production methods have been instituted. On the merchandising end, improvement, too, has been widespread during 1936 with the result that refiners have continued to concentrate more heavily on production than on retailing, turning these efforts over to independent owner-operated outlets.

NON-FERROUS METALS

Tin deliveries to consuming establishments in 1936 exceeded the 1935 total by about 6,000 tons or 20 per cent. Copper production expanded substantially and the year closed with a price level higher than at any time in almost seven years. More zinc retorts were in operation at the end of 1936 than at any other comparable period since 1929. Industrial demands for lead, zinc and aluminum expanded, too, in 1936 with consequent strength in prices at the close of the year. Some of the improvement in non-ferrous metal prices was traceable to mounting demands for armaments abroad but domestic industrial requirements were distinctly the more important influence, having due regard for the depleted stocks of the principal non-ferrous metals. The use of nickel in 1936 set a new all-time record, in large degree due to the expanding demands from the steel industry as an outgrowth of the broadening use of alloy steels.

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ELECTRICAL EQUIPMENT

New orders for electrical goods of all descriptions placed with manufacturers during 1936 expanded by something more than one-third and was back up to the 1931 level, this despite continued sharp curtailment in public utility buying which cannot long be further deferred now that power production is establishing new peaks. Sales of household electric refrigerators in 1936 made a new all-time high record. Vacuum cleaners, toasters, irons, radios, all were manufactured and sold in larger volume in 1936 than in several years. New orders for outdoor power switching equipment in 1936 showed broad improvement over the 1935 business. Orders for and shipments of electric motors were much greater in 1936 than in the previous year. Even shipments of manufactured mica, panel boards and cabinets, laminated phenolic products, power cables, and electrical porcelain shared in the general recovery in the electrical industry.

MACHINERY AND APPARATUS

Manufacturers of machinery and apparatus during 1936 generally fared much better than they did in 1935. Some, such as those producing equipment for steel finishing mills and air conditioning equipment, even exceeded 1929 performance. Machine tools generally were in greater demand in 1936 than for any other year, excepting only 1929. New orders for electric overhead cranes were in substantially greater volume than in 1935 but were still far below the level of the peak year. Foundry equipment orders were placed in much heavier volume during 1936; in fact, they were heavier than for any other year since 1929. New orders and shipments of oil burners reached totals in 1936 never before attained. Production and sales of mechanical stokers, both large industrial and small domestic types, enjoyed much broader volumes than those seen in recent years. Shipments of all classes of water pumps were made in larger quantities while broad gains were registered in shipments of measuring

and dispensing pumps of all descriptions. Water softening apparatus and complete water systems were shipped by manufacturers in larger quantities during 1936 than in any recent year. New orders for steel boilers of all types were greater in 1936.

CONSUMERS' GOODS

Most of the principal consumers' goods industries either reached previous peak levels or exceeded them in 1936. Manufactured foods were a notable exception. About 410,000,000 pairs of boots and shoes were produced, exceeding the previous high recorded in 1935 by some 7 per cent. The production of cigarettes exceeded by more than 10 per cent the 1935 peak and was about one-third higher than the 1929 figure. Shipments of pneumatic rubber tires by manufacturers gained by something less than 10 per cent over the 1935 figure but were only about 80 per cent of the total for 1929.

The 1936 consumption of cotton almost reached the 1929 level while cotton mills at the 1936 year-end were more heavily booked than in many years. Wool consumption in 1936 failed to reach the level of the previous year but was much above the 1929 level. Rayon deliveries to consuming establishments made a new all-time record in 1936 but silk deliveries not only declined from the 1935 volume but were only about three-fourths as heavy as they were in 1929. Household furniture and rug manufacturers, too, showed materially broader activity than in any recent year.

In these contrasts lie many of the basic differences in the fortunes of broad segments of our economy. But it is in the food manufacturing industry where, with a relatively inelastic demand, that the least spectacular changes have occurred. Butter production in the factory during 1936 fell below the 1935 level by an unimportant amount and was just about at the 1929 level. The production of factory cheese in 1936 was some 10 per cent greater than in 1935 and bettered the 1929 figure by perhaps 12 per cent. Wheat flour out-

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put in 1936 was some 5 per cent greater than in 1929. Largely because of the drought and in order to avoid cattle feeding, the production of meat under inspection—chiefly beef and pork—was greater than in 1935, but the output of lamb and mutton suffered a decline from the output of 1935.

PAPER AND PRINTING

The production of wood pulp increased during 1936 by some 25 per cent. The total output of paper, too, showed a substantial gain over the 1935 volume, in large measure due to a rising demand for newsprint, though most other classes of paper also showed creditable gains. During the year a noticeable migration to the South occurred in the paper industry, principally in the case of newsprint paper. Paperboard manufacture in 1936 enjoyed a better year than at any time since 1929. Paperboard shipping boxes showed an appreciable increase in output over the 1935 volume.

A large increase occurred over 1935 in the operations of printers and at the year-end they were on a level not seen since 1929. Book publishers partook of the general industrial gains of 1936 and, likewise, were on schedules somewhat reminiscent of 1929.

FACTORY EMPLOYMENT

The level of factory employment rose during 1936 but not appreciably. Averaged for the year, it was some 6 per cent higher than in 1935. Factory payrolls rose much more than did employment and, averaged for the year, the gain over 1935 was about 15 per cent. Increases over 1935 in both employment and payrolls also occurred in the public utility and communications industries.

Labor in 1937 can be counted upon to make much of the fact that its gains in employment during 1936 have been much smaller than that shown for production. This is no new phenomenon, though the solution of it may be attempted along somewhat newer lines if the government is to play the part which seems destined for it.

PROFIT AND WAGE LEVELS

The volume of industrial profits swelled materially in 1936 and to a level not seen since 1929. Dividend payments to industrial stockholders reached a new all-time high at about \$4,250,000,000, in good part due to the penalty tax on undistributed profits levied under the Federal income tax law. This same legislation had its part, too, in bringing about wage increases and liberal bonuses to employees but these seem only as forerunners of general demands on the part of labor for higher wage rates. With the dividend total for 1936 some \$1,250,000,000 or about 40 per cent better than for 1935, the 1937 labor problem thus looms larger than for any recent year. Perhaps one solution lies in a more universal application of profit sharing or employee bonuses such as was adopted in mid-1936 by one of the largest manufacturers of electrical equipment.

FOREIGN TRADE VOLUME

Our foreign trade showed further expansion in 1936. Exports of all classes of merchandise, on a dollar basis, were on about the 1931 level. Imports exceeded the 1931 figure but failed to reach the 1930 volume. Exports of manufactures and semi-manufactures outperformed other classes of merchandise in the improvement over 1935; for imports, crude materials and foodstuffs showed larger gains over 1935 than did manufactures and semi-finished goods. The abandonment of the gold standard by the gold-bloc nations late in 1936 and the consequent lowering of tariffs and reduction in quotas helped to expand foreign trade somewhat as did generally improving conditions in South America and Russia. Some increase in exports no doubt was due to the armament race abroad; particularly is this true in steel, machinery and related lines.

RAILROADS

While still plagued with top-heavy financial structures, the railroad industry managed in 1936 to show progress toward better income levels. A

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gain of something more than 10 per cent in carloadings over the 1935 figure occurred, but even so the industry moved less than 70 per cent of the carload volume handled during 1929. Railroad transportation was expanded during 1936 for both passengers and freight; for passengers, with more and faster trains at lower rates, and for shippers with collection and delivery services. Obviously these gains were made possible by expanding industrial gains and a generally rising national income. With railroad earnings swelled by the largest volume of carloadings since 1930, railroads became heavier purchasers of locomotives, rails, passenger cars and freight cars and equipment generally than in several years. What is more significant is the improving outlook for those industries whose custom depends upon the railroads, for now the railroad prospects are distinctly more favorable, even though momentarily labor clouds seem to thicken.

CONSTRUCTION

More construction was started in 1936 than in any other year since 1931. The increase over 1935 amounted to about 46 per cent; the recovery from the 1933 depression low amounted to 115 per cent. With all of this improvement, the year 1936 ended with a total volume for the 37 eastern States which was only 41 per cent as great as the 1928 volume, the all-time peak in construction. In these contrasts lie the story of an industry that is notorious for its rather rhythmic periods of intense famine and feast.

The industry is now in one of those ascending phases, when feast will largely supplant famine. Though this be true, a period of construction boom is not impending—in fact that appears a considerable distance away. Further gains in construction in which the emphasis is to be shifted from public to private projects will in all probability be experienced.

For 1937 the prospects are brightest for any year since 1930. Residential building should continue in the spotlight. Newcomers in the recov-

ery movement, such as factories and commercial buildings, should show broad expansion in the new year. Increased expenditures for power plant extensions appear destined to make their bow in 1937.

Labor shortages in some of the skilled trades, though presently an unimportant factor, will probably become more significant in 1937 as a limiting influence on the rate of recovery. Further rises in the prices of building materials appear probable too; as a result, construction costs generally are likely to average higher than for any other year since recovery began; for 1936 they averaged about 5 per cent higher than in 1935.

Altogether, though the prospects for 1937 are bright, the rate of construction recovery over 1936 is likely to be smaller than it was in 1936 over the previous year; in part this appears probable because of an indicated diminution in public projects, particularly in that class of construction which was recently stimulated by the Federal government through the WPA and PWA programs.

Under the stimulus of improving construction conditions, it was natural that building materials and equipment should share in the betterment. Lumber production showed broad expansion over the 1935 output but shipments from west coast mills were seriously retarded toward the close of 1936 by the maritime strike. Sales of lumber at retail yards, too, reflected important gains. Hardwood flooring, both oak and maple, showed substantially increased production, with the more spectacular gain in the case of oak, for which the 1936 production almost doubled the 1935 volume, reaching a level higher than for any year since 1929.

The production of Portland cement almost reached 115,000,000 panels, for a gain of about 50 per cent over the 1935 output, but was only about two-thirds the total for 1929. As 1936 drew to a close some price unsettlement appeared due to increasing imports of foreign cements. Shipments of fabricated structural steel and new orders for fabricated steel plate were measurably heavier than in 1935

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though they still were some distance from previous peak levels. Shipments of common brick as well as face brick, also showed the improved conditions in construction. Gypsum production showed a gain of almost one-third over the output of crude in 1935, while 1936 shipments of uncalcined gypsum also reflected the better market conditions; the 1936 output of calcined gypsum was likewise greater than for the previous year.

Production of cast-iron boilers, radiators, and fittings expanded during 1936 while data on the production of sanitary ware, porcelain plumbing fixtures, vitreous plumbing fixtures, plumbing brass, glass, and paints attest to the universal gains in the basic construction industry.

COMMODITY PRICES

No resumé of the industrial picture of 1936 would be complete without mention of the price situation in major commodities. Reflective of an improving relationship between supply and demand and a mad race for armaments abroad virtually all commodities entering into international commerce scored striking price advances in 1936. What is of as great importance is the probability that further price gains are likely for 1937.

Rubber at the 1936 year-end was almost 60 per cent higher than a year earlier. Sugar advanced almost 40 per cent in the same period; cocoa more than doubled; coffee almost doubled; wheat added about 33 per cent to its 1935 year-end price; cotton only advanced about 5 per cent; but copper gained about 30 per cent and lead increased by almost one-third. Wool prices, fine territory, for the first time since early 1929, crossed the dollar level.

The general level of wholesale prices at the year-end stood at 85 per cent of the 1926 average, for a net gain over the position at the 1935 year-end of but 6 per cent. With such striking advances in raw products as above indicated, further im-

portant gains in the general wholesale price level appear imminent, with a consequent firming in the retail price structure and the general cost of living. What repercussions these are likely to have is difficult now to determine, but some consumer resistance is probable to develop in 1937. Evidences, too, that manufacturers were attempting to beat even further advances in prices of materials—by the most aggressive forward buying since 1920—were rapidly accumulating as 1936 became history.

CONCLUSION

Under these conditions 1937 made its bow, and with it, industrial strife easily has become economic recovery enemy No. 1. Emergence from a long and devastating depression had only just become a reality when it was borne in on us that no industrial recovery can be complete so long as millions are still unemployed and additional millions live by governmental largesse—so long, too, as the employed millions are willing to believe that they have been denied collective bargaining or the right to organize, or that their wages are too low, their hours too long, their working conditions substandard. Here is a problem so broad, so deep, so complex that it promises to become the nation's first order of business, even if it entails governmental price controls such as now abound in the Central European countries, a revival of the principles of NRA—even if that involve a constitutional amendment—or a system of Federal licensing of interstate business—this despite the fact that the legal validity of the Wagner Labor Relations Act still hung in the balance at the 1936 year-end. In the meantime installment selling seems destined to continue to make easier the purchase of a wide variety of goods and services, again creating the illusion of prosperous times.

CONDITIONS OF INTERNAL COMMERCE

CONDITIONS OF INTERNAL COMMERCE

By ADA LILLIAN BUSH

BUREAU OF FOREIGN AND DOMESTIC COMMERCE, DEPARTMENT OF COMMERCE

BASIC PRODUCTION

General progress in industrial activity characterized the current year. No sharp recessions occurred to check this forward movement. Comparable statistical measurements for 11 months of each year reveal that the average for industrial output in 1936, without adjustments for seasonal variations, was 15.9 per cent greater than for 1935. All important industries more than sustained in 1936 the upward trends which yielded for the preceding year a production average that was 11.3 per cent above the average for 1934 (see *THE AMERICAN YEAR BOOK*, 1935, pp. 469-470). During the closing months of 1936, industrial production continued at the best level achieved since 1929. A lessening of the disparity between the output of durable and non-durable goods was an outstanding accomplishment in 1936.

INDIVIDUAL INDUSTRIES

Steel ingot production exceeded all records since 1929. Expansion in capital goods industries was a contributing influence to pronounced activity in iron and steel mills. High lights from comparable averages for 11 months of both years show percentage rises in 1936 from 1935 totals as follows: steel ingot production, 40 per cent; automobile output, 11.7 per cent, and residential construction contracts awarded, 69.7 per cent. Increased activity in these lines is naturally associated with expansion in many other industries. The year's record, as might be expected, includes a favorable showing in electric power production, and heartening upturns in the output of such commodities as building materials of all kinds, railway equipment, agricultural implements, etc. Recovery in the rubber-manufacturing industry can be credited to increased activity in boot and shoe factories as well as in tire plants. Likewise, expansions

in the production of innumerable other items of consumer goods are shown in the Department of Commerce's assemblage of reports indicative of 1936 progress.

DISTRIBUTION

The trend of general business activity, particularly the trend toward improvement in the "heavy" industries, was reflected in the volume of freight traffic. Car loadings during 11 months of 1936 were 14.1 per cent above the total for the corresponding period in 1935. Important factors contributing to a relatively high level of freight traffic in December were the seasonal movements in coal transportation, the sustained or expanding operations in a wide variety of individual industries, and the increased activity in retail trade. In automobile sales, the aggregate value for the first 11 months of 1936, according to an official report of the Bureau of Foreign and Domestic Commerce, was 23.5 per cent above that for the corresponding period of the preceding year and 70 per cent higher than for the first 11 months of 1934. Preliminary figures for November placed sales for that month about 18 per cent higher than for November, 1935. Consumer buying of furniture and refrigerators was also a noticeable feature of the current year. Over corresponding 11-month periods, the 1936 sales total of general merchandise in rural areas (mail-order and rural chain-store sales) was 15.2 per cent above sales in 1935, and department store sales, reflecting urban buying, rose 11 per cent. Preliminary year-end reports estimate that, inclusive of Christmas trade and on the basis of physical volume, both rural and city purchasing not only reached the highest figure since 1929 but may have exceeded the volume of consumer buying in 1929. Records on foreign trade, available at this time, indicate that, on a quantity

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basis, the increase in exports was appreciable, but, since there was a larger increase in the value of imports than in the value of exports, the merchandise trade balance for 1936 showed only a relatively small export surplus.

EMPLOYMENT AND PURCHASING POWER

While there is no definite information as to the number of unemployed employables in the United States, various estimates agree that large numbers of people are still out of work. However, the sustained improvement in production and distribution was reflected in gains in employment by private industry. Among factory workers, employment increased 6.3 per cent and aggregate pay rolls 14.6 per cent in the first 11 months of the year, with average hourly rates of pay above the 1929 average. Statistics on the total of gains resulting from increased activity, other than in the manufacturing industries, are not available, but such gains appear to have been widely distributed. Estimates obtainable during the first week of 1937 indicate that during 1936 the steady increase in private employment yielded for the 12-month period a larger employment gain than was made in any other year since pre-depression days. The increase in cash income to farmers, higher factory wages, bonus distributions and increased dividends all contributed to an enlarged purchasing power.

PRICES, PROFITS AND FINANCES

To some extent, naturally, price movements have been influenced by conditions affecting individual commodities or groups. The average for prices during the first 11 months show wholesale prices up 0.6 per cent, retail prices up 2.7 per cent and wheat prices up 9.4 per cent from the previous year's levels. Corn and cattle prices were down 5.8 per cent and 4 per cent, respectively, while cotton rose 0.9 per cent. In November practically all important groups shared in an upward movement which constituted the broadest

advance in commodity prices since 1933. Gains in the volume of business and the price situation were reflected in business profits. Earnings of 161 leading corporations, covered by comparable reports, were substantially higher than in 1935. While all major classes of corporations reported improved earnings, the largest gains were made by the industrial companies that most directly profit from increased consumer purchasing power and from expansions in capital equipment. A large volume of corporate refunding operations brought a substantial saving in interest charges. The upward movement in bank loans to private business indicates a trend toward expansion. Increasing industrial earnings and extra dividend payments, due to surtax on undistributed earnings, were among the various tangible and intangible influences contributing to stock market activity which showed unusual stimulation during the last quarter of the year. Continued gold imports added to excess bank reserves.

THE OUTLOOK

All statistical measurements justify the conclusion that, despite the political disturbances of an election year, the foothold on recovery gained in 1935 has been held and strengthened throughout 1936, and 1937 begins under more favorable conditions than have been in evidence since 1929. Further gains in industrial production, more advancement in capital goods industries, satisfactory commercial credit conditions, and increased purchasing power accompanied by active trade might normally be expected from a study of established business indicators. There are also heartening intangible elements. The material betterments in evidence have helped to dispel the spirit of depression. However, wise legislation, steadying political influences, and close cooperation between business and the Administration are seeming essentials to a satisfactory development of existing favorable factors and a lessening of certain generally-recognized difficulties. Today's bright hopes are shadowed by the enforced

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idleness of huge numbers of our people, by a threatening labor situation, an unbalanced budget, a prospect of

a further rise in the cost of living, and by the uncertainties of the foreign situation.

THE UNITED STATES TARIFF COMMISSION

By ROBERT L. O'BRIEN

CHAIRMAN, UNITED STATES TARIFF COMMISSION

MEMBERSHIP

The members of the Tariff Commission are Robert L. O'Brien, Republican, Massachusetts, Chairman; Thomas Walker Page, Democrat, Virginia, Vice Chairman; Edgar B. Brossard, Republican, Utah; Oscar B. Ryder, Democrat, Virginia; Raymond B. Stevens, Democrat, New Hampshire; and E. Dana Durand, Republican, Minnesota. Mr. O'Brien's original term as Commissioner expired on June 16. He was renominated by the President on May 30, 1936, and confirmed by the Senate on June 5, thus beginning another term for the period ending June 16, 1942. Sidney Morgan is Secretary of the Commission.

ORGANIZATION

The administrative work of the Commission is under the immediate supervision of the Secretary. The general direction of the work of investigation and of research is under the Director of Research who is aided by three assistant directors of research. The legal work of the Commission is handled by the Legal Division under the supervision of its General Counsel.

The Planning and Reviewing Committee, appointed from the staff to assist the Commission in planning and carrying on its work, consists of the Director of Research, the three assistant directors of research, the Secretary of the Commission, and the chief of the commodity division and the assigned economist who are concerned with the subject before the Committee for discussion. One of the assistant directors of research acts as Executive Secretary to this Committee.

The principal office of the Com-

mission is in Washington, D. C., and a field office is maintained at the port of New York. The present staff of the Commission numbers slightly over 300.

TWENTIETH ANNIVERSARY OF THE COMMISSION

Sept. 8, 1936, marked the twentieth anniversary of the enactment of the law that set up the United States Tariff Commission. Since it was organized there have been two tariff acts put into effect, each of them providing for new or additional duties for the Commission. The Tariff Commission was created in 1916 in response to a persistent and widespread popular demand for a source of accurate and unbiased information relating to the tariff and for a sounder and more modern procedure in tariff making. The basic purpose and function of the Tariff Commission is as originally specified in Section 702 of the Revenue Act of 1916:

That it shall be the duty of said commission to investigate the administration and fiscal and industrial effects of the customs laws of this country now in force or which may be hereafter enacted, the relations between the rates of duty on raw materials and finished or partly finished products, the effects of ad valorem and specific duties and of compound specific and ad valorem duties, all questions relative to the arrangement of schedules and classification of articles in the several schedules of customs laws, including their relation to the Federal revenues, their effect upon the industries and labor of the country, and to submit reports of its investigations as hereafter provided.

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The first opportunity to test the value of the Commission's contribution to general tariff making came with the Emergency Tariff Act of 1921 and with the general tariff revision of 1922. The extent to which the material provided by the new agency assisted the legislators in their work is not even now generally known. However, the value of the Tariff Commission reports as a source of pertinent, authoritative, and impartial factual information was recognized by the Congress in the enactment of tariff bills and other tariff legislation, and the reputation of the Commission as an organization competent to collect and prepare such information became firmly established. Especially was this true in the revision of 1922, for which the Commission prepared short statements, known as summaries of tariff information, giving the essential trade statistics and the more significant facts, economic and competitive, in respect to each article covered by the tariff.

The function prescribed for the Tariff Commission in the flexible tariff provision was enacted for the first time as a part of the Tariff Act of 1922. Under the terms of this provision (section 315), the President was empowered to proclaim changes in duty only after an investigation and presentation by the Tariff Commission of comparative costs and factual data as to conditions of competition. A later Congress reenacted this rate-adjusting power in Section 336 of the Tariff Act of 1930 and provided that the President may issue proclamations affecting tariff rates only in accordance with cost differences specified by the Tariff Commission as a result of its investigations. The work under the "flexible" provision may be looked upon as a special phase of the Tariff Commission's duties. Its significance lies not only in its being an experiment in tariff making under a rule prescribed by the Congress but in the effect which the thoroughgoing cost investigations have in broadening the Commission's comprehension of the essential problems

involved in the competition between domestic and foreign products and in the adjustment of tariff rates.

Early in the present (F. D. Roosevelt) Administration, the Congress prescribed new duties for the Tariff Commission, namely, those under the National Industrial Recovery Act of June 16, 1933. The Commission was required to make such investigations as might be ordered by the President to determine whether imports of specified commodities were entering on such terms or under such conditions as to render ineffective or to endanger seriously the maintenance of the codes of fair competition established under that act. On June 12, 1934, the Congress passed the Trade Agreements Act and designated the Tariff Commission as one of the agencies to supply to the President information needed in the negotiation of agreements for the reciprocal lowering of trade barriers and the expansion of foreign commerce. In anticipation of the enactment of this law, the Commission had been requested by the Senate Resolutions 325 and 334 to supply certain specified information concerning the foreign trade of the United States. In making trade agreements, the Tariff Commission performs somewhat the same functions that it performs in Congressional tariff revisions.

CURRENT ACTIVITIES OF THE TARIFF COMMISSION

The work of the Tariff Commission during 1936 was under the provisions of Sections 332, 336, 337, and 338 of the Tariff Act of 1930, and Section 350 which is an amendment to that act. In addition to the specific work under these sections, another project is being carried out at Richmond, Va., by the W. P. A. workers under the direction of the Commission. Section 332 prescribes the general duties and powers of the Tariff Commission and is the section under which its general studies and reports are made. Section 336 authorizes investigations and reports by the Tariff Commission as a basis for adjustments in tariff rates by the

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President. Under section 337 the Commission considers complaints of alleged unfair methods of competition and unfair acts in the importation and sale of foreign articles. Section 338 authorizes the President to take certain action when foreign countries discriminate against the commerce of the United States and directs the Tariff Commission to ascertain and report to the President when such discriminations exist. Section 350 authorizes the President to enter into trade agreements involving changes in duties and other trade restrictions and designates the Tariff Commission as one of the agencies upon which he shall call for information and advice. The activities of the Tariff Commission during 1936 under these provisions are briefly referred to below.

GENERAL POWERS OF THE COMMISSION (SECTION 332)

Perhaps the most important of the numerous projects carried on under this section during the year has been the continuing revision of the summaries of information which combine in concise form all of the information which the Commission has obtained with respect to individual products or related groups of products. This task is being carried forward in response, specifically, to Senate Resolution 334 passed by the Senate in 1933, and although the bulk of the work on these summaries has been completed, they are still being revised to incorporate information obtained since the program was undertaken.

During the past year the Commission has also undertaken to prepare surveys with respect to certain important commodities or groups of commodities, and these will be published as they are completed. The first of these will be the survey of the chemical nitrogen industry which is referred to below. One report issued in 1936 under this section entitled "Recent Developments in the Foreign Trade of Japan" has proved to be of particular interest. The Commission has also published summaries of the trade agreements and

digests of information with respect to each of the products upon which the United States has granted concessions.

SURVEY OF CHEMICAL NITROGEN INDUSTRY

The Commission has for some time been collecting data with respect to the chemical nitrogen industry. Because this material was available and in view of the public demand for information of this type the chemical nitrogen survey was the first on the list of such studies to be completed. When it became known that this report was being prepared, so great was the interest in it that the Commission in May, 1936 issued preliminary statistics showing the capacity of all countries for producing chemical nitrogen by primary processes; the growth of capacity and production by products and by countries, and similar data. The subject is of importance because of the increasing use of fertilizers in which nitrogen is one of the three major plant foods and because chemical nitrogen is essential to nearly all kinds of explosives, both industrial and military, and to many other products such as certain kinds of dyes, rayon, and medicinals. Approximately 25 products are produced by the industry, chief of which are ammonia, ammonium sulphate, sodium nitrate, calcium cyanamide, nitric acid, ammonium nitrate, and calcium nitrate.

REPORT ON THE FOREIGN TRADE OF JAPAN

Widespread interest in developments in Japan's trade with the United States and with other countries led the Commission to make a comprehensive study of the foreign trade of Japan. As a result of this study the Commission issued early in the year a report under the title "Recent Developments in the Foreign Trade of Japan, Particularly in Relation to the Trade of the United States." The first part of the report deals with the more general features of Japan's foreign trade, especially with changes of interest to the United States. The second part

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is a detailed analysis of imports into the United States from Japan by individual commodities for the years 1929 to 1934 and the first eight months of 1935. This section is mainly statistical but contains brief comments on the relation to the United States industry and trade of the leading items imported from Japan.

REPORTS ON CONCESSIONS IN TRADE AGREEMENTS

As soon as practicable after the consummation of each major trade agreement made by the United States pursuant to the Trade Agreements Act of June 12, 1934, the United States Tariff Commission issues in mimeographed or multilithed form a report containing a general summary of the facts pertinent to the agreement, including a survey of our trade with the foreign country concerned, and containing digests of the trade data with respect to each product on which a concession was granted by the United States. Each digest gives, with respect to the article covered by it, information on its tariff history, on the *ad valorem* equivalents of the duty imposed on it, on the nature of the article and its uses, on production, imports, exports, and other trade factors, and on competitive conditions. These statements are prepared from the full technical data previously made available by the Tariff Commission to those having the trade agreements program in charge. Many more products were given consideration during the negotiations with each country than appear in any particular report.

During the year reports were issued concerning concessions in trade agreements with Canada, the Netherlands, Switzerland, and Finland. A report on France is in course of preparation. The digests issued for the commodities covered by each trade agreement serve to indicate to the Congress the nature of the work being done in the revision of the tariff information summaries.

RATE ADJUSTMENT PROVISIONS (SECTION 336)

Under the rate adjustment provisions four investigations were completed during the year and seven are pending. Reports were sent to the President on the four completed investigations under Section 336 and resulted in increases in duties on frozen swordfish, unembroidered wool-knit gloves, cotton cloth, and slide fasteners. Investigations in progress cover furs, embroidered wool knit gloves, cotton hosiery, cotton velveteens, china and earthenware, fluor-spar, and cork insulation.

Section 336 of the Tariff Act of 1930 affords means whereby import duties can be adjusted, without action by the Congress, to equalize foreign and domestic costs of production. This was the only means provided in the tariff act for making adjustments until, under the Trade Agreements Act passed 1934, the President was authorized to adjust tariff rates in return for concessions by foreign countries. The purpose of this act was to bring about mutual reductions in trade barriers on the part of the United States and foreign countries. In some instances, the items upon which our duties have been reduced under this law might otherwise have been made the subject of decreases under Section 336. Naturally, with the prospect of reductions by this method, there has been little demand for investigations under Section 336 looking toward decreases in the tariff. This is reflected in the applications filed this year of which four have asked for decreases and 14 for increases in rates of duty.

During the year five investigations under this section were instituted. Those with respect to slide fasteners (zippers), cotton hosiery, and cotton velveteens and corduroys were ordered on application of interested parties. The other two, concerning certain furs and embroidered wool knit gloves, were ordered in response to Senate Resolutions directing the Commission to institute investigations.

During 1936 the Commission made

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a complete review of all the work pending on its docket under Section 336 as a result of which a number of applications were denied and a number of investigations were dismissed without prejudice. Many of these had been before the Commission for some time, and in most instances the conditions which prevailed at the time the applications were filed or the investigations ordered had materially changed. Some of them also related to products included in trade agreements and under the Trade Agreements Act such products are not subject to further action under Section 336. The information obtained in the dismissed investigations is being used in special studies.

COTTON CLOTH

Of the investigations completed under Section 336 during 1936 the most important was the one on cotton cloth. This investigation was instituted in response to Senate Resolution 104, 74th Congress. On May 14, 1935, a public hearing was held in Washington, D. C. The report on the investigation, somewhat delayed by assistance rendered the Cabinet Committee in its textile study, was sent to the President April 17, 1936. The President, by a proclamation effective June 20, 1936, increased the duties on bleached, printed, dyed, or colored cotton cloths containing yarns the average number of which exceeds number 30 but does not exceed number 50.

The duties on cotton cloth in paragraph 904 of the Tariff Act of 1930 are progressive on the basis of the yarn number; the finer the yarn the higher the duty. On the cloths affected by the proclamation the old rates ranged from 23.85 to 33.50 per cent *ad valorem*; the new rates from 34 to 47.50 per cent *ad valorem*. The proclaimed duties represented an increase over the existing duties of about 42 per cent. The cloths on which duties were increased constituted about 58 per cent, on the square yard basis, of the total cotton cloths imported in 1935, and about 90 per cent of the cotton

cloths imported from Japan in that year.

UNFAIR PRACTICES IN IMPORT TRADE (SECTION 337)

Numerous complaints of unfair trade practices filed with the Commission have led to investigations. Those which were concluded during 1936 are "Coilable Metal Rules," "Cigar Lighters," and "Oxides of Iron." The Commission has recommended that the jurisdiction under Section 337, so far as it concerns unfair competition other than patent cases, be transferred to the Federal Trade Commission and that all cases involving violation of patent rights be referred to the Federal Courts. Legislation to effect this change was introduced in the last session of the Congress, but no action was taken upon it.

DISCRIMINATION BY FOREIGN COUNTRIES (SECTION 338)

Section 338 of the Tariff Act of 1930 provides for the imposition by proclamation of the President, whenever he finds that the public interest will be served thereby, of new or additional rates of duty not to exceed 50 per cent *ad valorem* or its equivalent on any or all products of any foreign country which discriminates against the commerce of this country "in such manner as to place the commerce of the United States at a disadvantage compared with the commerce of any foreign country." If, after such proclamation, the foreign country maintains or increases its discrimination against the commerce of the United States, the President is further empowered, if he deems it consistent with the interests of the United States, to exclude any products of such country from importation into the United States.

The Commission studies acts of foreign countries which affect the commerce of the United States to determine whether they result in discrimination against our commerce. In addition to this current general study, the Commission investigates any act or practice, involving alleged discrimination, which may be called

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to its attention. The President has taken no action directly under this section; he, however, found, under the authority contained in the Trade Agreements Act, that Germany and Australia discriminate against the commerce of the United States and has withdrawn from them the benefits of the concessions granted to other countries.

TRADE AGREEMENTS PROGRAM

As previously indicated, the Tariff Commission has prepared summaries of the trade agreements after they were completed. In addition to this, and much more important, is the work that has been undertaken on the Trade Agreements program.

The Tariff Commission is represented on all interdepartmental subcommittees concerned with the reciprocal trade agreements program and has continued to furnish these committees, especially the committee for each country with which a trade agreement is being negotiated, with specialized studies dealing with all phases of the trade between the United States and the respective countries. These studies, the joint work of the commodity and economic experts of the Commission's staff, furnish information not only for each article which finally appears in the trade agreement with a particular country, but for hundreds of others which are potential subjects of concessions to that country. These studies are in great detail and show for each type, style, and kind of a particular commodity all of the available information. The committees and subcommittees thus have at hand a sufficient body of data to enable them to examine and appraise the probable economic effects of each degree of concession that may be made.

Elaborate statistical and economic analyses are required in this work, as well as expert knowledge concerning all phases of the trade between the two countries negotiating an agreement. In each particular instance an effort has been made to bring all of the data up to date.

During the year the Tariff Com-

mission instituted a special statistical service to decode current statistics of the Department of Commerce relating to the import items covered in each trade agreement. This service makes available for each item the most recent import statistics, and where available, import data for a period of years preceding the effective date of each trade agreement. During the year these records have been consulted by a large number of government bureaus and by many outside agencies.

ASSISTANCE TO COMMITTEE FOR RECIPROCITY INFORMATION

The Tariff Commission has cooperated fully with the Committee for Reciprocity Information whose Chairman, Thomas Walker Page, is Vice Chairman of the Tariff Commission, and whose offices are located in the Tariff Commission.

The Committee for Reciprocity Information, which is made up of representatives from the Departments of State, Commerce, Agriculture, and the Tariff Commission, was designated by the President to receive the views, both written and oral, of interested parties who wish to present information after intentions to negotiate a trade agreement have been announced by the State Department.

The statements received by the Committee are digested, with the aid of the staff of the Tariff Commission, and the digests, together with copies of the original statements, are supplied to each member of the Committee in order that the government department or agency which he represents may be fully advised of the views of interested parties and may have this information available as a basis for decision in regard to concessions which will be asked for or granted in the trade agreement. Similarly, the testimony presented at the hearing and any other material received in the way of written statements or exhibits is summarized. This together with the complete transcript of the hearing, the statement received, and the digests thereof form the basis also for a comprehensive report on all information

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received. Sufficient copies of this report are reproduced to permit distribution to all members of the Committee for Reciprocity Information, who, in turn, make the data available to those in their respective departments who are concerned with the negotiations.

Since the authorization to undertake reciprocal trade agreements was passed by the Congress in June, 1934, 18 agreements have been undertaken; of these, 14 have been completed and are now in operation.

DUTIES OF THE COMMISSION UNDER THE SOIL CONSERVATION ACT

The Soil Conservation Act amended certain portions of the Agricultural Adjustment Act which authorized the President to have the Tariff Commission make an investigation when he had reason to believe that articles were being imported into the United States under such conditions and in such quantities as to render ineffective or to interfere materially with any program to reduce the amount of any product processed in the United States from a product subject to an adjustment program.

If, after the Commission's investigation, the President finds it necessary he is empowered to impose such limitations as may be necessary, provided, however, that the limitations imposed on imports from any country shall not be reduced to less than 50 per cent of the average annual quantity of such articles coming from such country during the period July 1, 1928 to June 30, 1933. No cases have come before the Commission for formal action under this law.

W. P. A. PROJECT UNDER THE SUPERVISION OF THE COMMISSION

With the assistance of the Works Progress Administration, relief workers at Richmond, Va., under the supervision of the Tariff Commission

have been employed on a series of useful projects in reorganizing statistical material, indexing and reclassifying a great body of tariff data and in other ways making promptly available to those interested in the tariff valuable materials that have existed hereto only as uncoded statistics. These data, of which the Tariff Commission possessed the only available copies, have been decoded and tabulated in a form to furnish a readily useable and accurate comparison of the statistics of imports for consumption, by countries, of the past five years (1931-35). Basic figures for 1929, the last full year under the Tariff Act of 1922, are receiving similar treatment in order that direct comparisons may be read between the figures for the depression period and those for a full year preceding.

The W. P. A. force at Richmond is also engaged in producing a complete revised classification of imports. The need for this has been sorely felt due to the numerous changes in classifications that have been brought about by the changes in the importance of commercial items, the introduction of new products, particularly in the chemical field, the reclassifications imposed by the reciprocal trade agreements, and the numerous changes resulting from the work of the Tariff Commission, the Customs Service, the Department of Commerce and others.

Special units are also working at cataloging all tariff publications, indexing all speeches and other references in the *Congressional Record* to the tariff and closely related subjects, and are putting in the most modern form the very extensive indexes and general literature now extant on the tariff, reciprocity, quotas, trade restrictive measures generally, and international affairs so far as they relate to foreign trade and government controls. Other tasks of similar character and value are also being organized.

XIII. MANUFACTURES AND TRANSPORTATION

ADMINISTRATION OF THE TARIFF LAWS

BY WILLIAM R. JOHNSON

CHIEF COUNSEL, BUREAU OF CUSTOMS, TREASURY DEPARTMENT

CUSTOMS COLLECTIONS

Customs collections have steadily increased during the past three years, a total of \$388,784,948 having been collected for the fiscal year 1936. This constitutes an increase of 12.2 per cent over the previous year. Approximately half of this increase was due to the large increase in imports of wool, wool manufactures, and agricultural products, although imports of metal and metal products accounted for \$9,000,000. The continuation of drought conditions in many parts of the country was largely responsible for the increase in imports of agricultural commodities. It is interesting to note that the increased collections during the fiscal year 1935 were chiefly due to larger importations of sugar and beverages than during the preceding year, while both of these commodities were less important as sources of revenue during 1936. The value of all dutiable imports entered for consumption during the fiscal year 1936 was \$921,498,000, an increase of 22.5 per cent over the preceding year.

VOLUME OF BUSINESS

The volume of business in practically all classes of customs activities

showed a decided increase during 1936. The number of entries filed throughout the service increased from 2,393,049 in 1935 to 2,712,954 in 1936, this being an increase of 13.4 per cent. The number of drawback transactions increased 5.4 per cent in 1936. The number of such entries having been made during the year was 19,443, as compared with 18,455 made during the preceding year. On the other hand, as a result principally of the reduction in rates of duty on sugar, drawback payments declined from \$13,727,160 during 1935 to \$10,022,556 in 1936. The number of vehicles and passengers entering the United States from abroad during 1936 increased in practically all cases.

LAW ENFORCEMENT SEIZURES

The number of seizures made for violations of the customs laws showed a marked decline for 1936, totaling only 14,641, or 6,258 less than in 1935. This decrease, as in the preceding year, was due to a further decline in the number of lottery and liquor seizures. The lottery seizures were reduced from 9,313 to 3,953 in 1936, due to the fact that most lottery cases are now being handled by

CUSTOMS COLLECTIONS AND REFUNDS

(Fiscal Years 1935 and 1936)

	1935	1936
Collections:		
Duties.....	\$344,941,758	\$386,941,335
Miscellaneous:		
Fines and forfeitures.....	\$ 1,036,979	\$1,436,135
Liquidated damages.....	239,124	285,368
Sale of seizures.....	170,264	43,262
Sale of unclaimed and abandoned merchandise.....	85,974	32,971
All other customs receipts.....	48,012	45,877
Total miscellaneous.....	1,580,353	1,843,613
Total receipts.....	\$346,522,111	\$388,784,948
Refunds:		
Excessive duties.....	7,062,345	5,718,328
Drawback payments.....	13,727,160	10,022,556
Total refunds.....	\$ 20,789,505	\$15,740,884

ADMINISTRATION OF THE TARIFF LAWS

the Post Office authorities. The liquor seizures declined from 5,226 in 1935 to 3,252 in 1936. While the total value of all seizures declined from \$2,403,718 in 1935 to \$1,590,968 in 1936, the value of merchandise seizures aggregated \$451,442, an increase of \$145,229 over the preceding year. This total includes watch movements valued at \$74,696, chinaware at \$64,066, jewelry at \$54,930, electric light bulbs at \$36,567, and wearing apparel at \$27,979. In addition to the goods which were actually seized, claims amounting to \$5,035,269 were initiated against importers in connection with various irregularities and frauds discovered after the goods had gone into consumption.

SMUGGLING

Customs officers were unusually successful in their efforts to suppress the smuggling of narcotics, 202 seizures of such drugs, valued at \$110,129, having been made during the year. The total seizures of narcotics aggregated 15,279 ounces. Included in this were several large seizures, such as one at Los Angeles, consisting of 3,393 ounces of smoking opium; one at San Francisco, consisting of 3,200 ounces of smoking opium, and one at Seattle, consisting of 288 ounces of morphine.

Six hundred and twenty-three automobiles, 74 boats, and 4 airplanes were seized for violations of the customs laws. These had an aggregate value of \$376,134. Customs officers also effected 7,297 seizures for other agencies of the Government, and detained 728 persons for violations of the immigration, narcotic, and other laws.

Among the many attempts to smuggle watch movements into the United States, which were thwarted by the vigilance of customs field officers, were three of outstanding importance. In two of these cases a "carrier" was employed. In both instances the carrier was arrested and his subsequent confession resulted in large seizures and also in the arrest and indictment of the principals. In the other case the watch movements were despatched by first-class mail,

concealed in toy roulette wheels, to the employees of a watch company, in care of certain hotels in various cities in the United States. Investigation proved a conspiracy to exist between the officers and owners of the company whereby the Government had been defrauded of large sums in duties. Two of the principals pleaded guilty and each was sentenced to the penitentiary and fined \$10,000.

FINES, PENALTIES, ETC.

An aggregate of \$1,764,765 for 1936 was collected as fines, penalties, etc., for violations of the customs laws. Approximately one-half of this amount represented liquor fines originating prior to the repeal of the 18th Amendment. Six major cases involving the smuggling of liquors during the prohibition era were settled during the past year. The aggregate recoveries by the Government in these six cases, when final payment is made, will amount to \$3,500,000.

ESTABLISHMENT OF DIVISION OF LABORATORIES

On April 1, 1936, there was established in the Bureau of Customs a Division of Laboratories, the chief of which was placed under the direction of the Commissioner of Customs. This was done in order to provide a more uniform and efficient customs laboratory service, the laboratories at New York, Philadelphia, Boston, Baltimore, Savannah, New Orleans, Kansas City, San Francisco, and Chicago being removed from the jurisdiction of collectors and appraisers and placed under the control of the Chief, Division of Laboratories.

The function of the customs laboratories is to analyze all official samples of merchandise received from customs officers and, under special arrangement, from other Treasury Department officers. Such samples of merchandise to be analyzed include sugar, wool, foods, oils, dyestuffs, ores, metal, coal-tar products, paper, textiles, narcotic drugs, chemicals, medicines, beverages, etc. All reports of analyses are submitted promptly to the requesting officer.

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The customs laboratories also assist enforcement officers in cases of fraud, smuggling, and similar violations of the customs laws, by the application of scientific methods of testing and detection.

CORRESPONDENCE SCHOOL OF INSTRUCTION

There has been established in the Bureau of Customs a Correspondence School of Instruction, the purpose of which is to assist customs officers and employees in acquiring a more comprehensive understanding of the customs law and approved procedure. The course of instruction is available to all officers and employees in the customs service, as well as to officers and employees of other branches of the Treasury Department and other departments and offices which cooperate with the personnel of the customs service. The present enrollment is approximately 8,600, many of whom have enrolled for the complete course of instruction.

REORGANIZATION OF CUSTOMS PATROL INSPECTORS

Effective Sept. 1, 1936, pursuant to an order of the Secretary of the Treasury under date of August 12, 1936, the customs border patrols were transferred from the jurisdiction of the several collectors of customs to the Customs Agency Service. Four Customs Patrol Districts were set up in the United States, with headquarters at Buffalo, N. Y.; Havre, Mont.; Jacksonville, Fla.; and El Paso, Tex., with a District Superintendent in charge of each district. The personnel of each district was sub-divided into five companies, with a captain in charge of each company. Under this arrangement, the Customs Agency Service consists of the Investigative Unit, with investigative officers throughout the United States and in several of the principal foreign countries, and the Enforcement Unit, consisting of the Customs Patrol officers.

The Customs Patrol originated in 1886 when mounted inspectors were first employed to patrol the Mexican border in sparsely settled regions. Later, a few mounted inspectors were

employed in sparsely settled regions along our northwestern border. The activities of this patrol expanded substantially during the era of National Prohibition, but the forces continued to function in separate organizations under the jurisdiction of the local collectors of customs. The Patrol is now a single unit, flexible and coordinated, prepared to concentrate its activities promptly when the need arises and to shift its personnel from point to point throughout the country as the needs of efficient administration may dictate.

The principal duty of the Customs Patrol is to police the land and sea borders of the United States; in automobiles on the adjacent highways and on horseback or on foot. They apprehend smugglers and seize the goods being brought into or removed from the United States in violation of law. They check the brands of livestock entering and leaving the United States, pursue and detain automobiles that fail to stop at customs inspection stations, board and search vessels suspected of being used in violation of customs or navigation laws, maintain surveillance over aviation fields to ascertain whether airplanes are entering or leaving the country illegally, and in many other ways enforce the Federal laws relating to importations and exportations.

The Customs Patrol depends upon the Investigative Unit of the Customs Agency Service for all classes of investigations of a major character. The Investigative Unit maintains a corps of qualified investigators, both in the United States and abroad, those stationed in the United States being known as customs agents and those stationed in foreign countries being known as Treasury attaches and Treasury representatives. The activities of the Customs Patrol are thoroughly coordinated with those of the Investigative Unit, and the two units of the Customs Agency Service are interdependent. The Customs Patrol also depends upon the Coast Guard for assistance in preventing smuggling from the high seas.

RAILROADS

RAILROADS

By J. J. PELLEY

PRESIDENT, ASSOCIATION OF AMERICAN RAILROADS

PROGRESS IN RECOVERY

General.—Steam railroads made encouraging strides in 1936 up the long grade leading from the valley of depression back to normal levels of traffic and earnings. Although the industry has yet to traverse the greater part of that long climb, the fact that the pace was quickened in 1936 and that the outlook for general business activity in 1937 seems favorable, supplies renewed strength to railway managements in their efforts to bring the industry safely through the period of economic distress.

Traffic Volume.—Increase in volume of traffic handled, both freight and passenger, stands out as the significant feature of 1936. As a result, operating revenues passed the \$4,000,000,000-mark for the first time since 1931. The added purchasing power thereby afforded enabled the carriers to expand their maintenance program, also to increase their capital expenditures for additions and betterments to property. The reviving purchasing power of the railroads, because of its vastness and diversification, has been a primary factor in the recovery program of the nation.

Increased Buying Power.—Railway purchases of fuel, materials and supplies in 1936 amounted to \$750,000,000. This was a greater expenditure for supplies than in any year since 1930, and exceeded the amount of purchases in 1935 by more than one-fourth. Practically all branches of industry benefited from this increased buying on the part of the railroads, for the carriers are in the market on a nation-wide scale for thousands of individual items.

Capital Expenditures.—Similarly, railroads in 1936 expanded their capital expenditure program. This was particularly true of equipment. During the first 11 months of 1936, 77 new steam locomotives, 32 new elec-

tric locomotives, and 39,556 new freight cars were installed, while the number of equipment units on order Dec. 1, 1936, was greater than at any time since 1930. Passenger car installations during the first nine months of 1936 numbered 134 cars, with 183 cars on order at the end of the period.

Unfavorable Factors.—As the year 1936 drew to a close, developments in two fields threatened the reviving purchasing power of the railroads. First, railroad labor leaders announced their intention to urge upon Congress the enactment of a bill designed to effectuate the six-hour day principle for railway employees. Second, on Dec. 19, 1936, the Interstate Commerce Commission denied the railways' petition for continuance beyond Dec. 31 of emergency freight charges. Both of these developments are of vital interest to rail carriers.

THE SIX-HOUR DAY PRINCIPLE

The Interstate Commerce Commission in 1932, in response to a Congressional resolution, made a thorough study of the effect and cost of applying the six-hour day principle to railway employees. In a unanimous report issued Dec. 6, 1932, the Commission estimated that the cost would approximate \$630,000,000 annually on the basis of 1930 operations. This figure includes steam railroads, switching and terminal companies, express agencies, the Pullman Company, and electric railways in interstate commerce. For Class I steam railways alone, the cost was estimated at \$547,000,000. Applying to basic data for the year 1936 the method followed by the Commission in its findings, the cost of the six-hour day principle, if applied to Class I railways in that year, would have approximated \$400,000,000.

The effect of adding \$400,000,000

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per year to operating expenses would be a tremendous shock to the railway industry and would set them back to a point below the lowest level reached during the depression. Class I railroads in 1932, the low point of the depression, failed to earn fixed charges by \$139,000,000, over two-thirds of the mileage being "in the red" for that year. If the six-hour day principle had been in effect in 1936, the deficit in net income would have been \$250,000,000, or \$111,000,000 more than it was in 1932, and something more than two-thirds of the mileage would have been "in the red." How long could the industry operate under those conditions? To what extent would the recovery program of the nation have been affected by this smothering of railway purchasing power? The answers are obvious.

The announcement of railway labor leaders that the six-hour day principle will be the object of their best efforts during the current session of Congress stands, therefore, as a distinct threat to continuing forward progress in railroad and national recovery.

EMERGENCY FREIGHT CHARGES

In its original decision in Ex Parte 115, the Interstate Commerce Commission granted a temporary increase in freight rates on certain commodities for the period April 18, 1935, to June 30, 1936. On June 12, 1936, after further hearings in the matter, the Commission authorized continuance of the increases, with some exceptions and modifications, for an additional six months, or through Dec. 31, 1936. In view of the approaching expiration date of the emergency charges, the carriers in October petitioned the Commission for a series of changes in permanent tariffs, some to be revised upwards, some downwards. The Commission set hearings in the matter to begin on Jan. 6, 1937. Meanwhile, the carriers petitioned for a continuance of the emergency charges until the Commission should have reached a decision with regard to the proposed changes in permanent tariffs. This petition was

denied by the Commission Dec. 19. The emergency charges grossed approximately \$118,500,000 in 1936. Thus the railways face a substantial loss in revenues in 1937 from that source.

PASSENGER FARE REDUCTION

On Feb. 28, 1936, the Interstate Commerce Commission handed down its decision and order in the general passenger fare investigation initiated by it some time previously. By a 5-to-4 decision, two Commissioners not participating, the maximum fare for passenger service was ordered reduced from 3.6 cents per mile to 3 cents per mile in Pullman cars and to 2 cents per mile in coaches. The Pullman surcharge was at the same time eliminated. These fares were put into effect on June 1, 1936, by all rail carriers whose rates were above those maxima at the time. Generally speaking, carriers in the Western and Southern Districts were not affected by the order, having adopted such a reduction, and in some instances a greater reduction, prior to the Commission's investigation. Roads in the Eastern District, where somewhat different conditions in the field of passenger traffic prevailed, had not followed the policy of roads in the other two districts in reducing fares prior to the Commission's order.

COLLECTION AND DELIVERY DECISION

The Interstate Commerce Commission, in a decision handed down Oct. 30, 1936, authorized Eastern railroads to expand their store-door collection and delivery service for less-than-carload freight. Tariffs and proposed schedules were found to be justified, except in so far as a minimum rate of less than 45 cents per 100 pounds prevailed. The decision established definitely that motor vehicle operations by railroads come under the Interstate Commerce Act, and not under the Motor Carrier Act as had been contended by complainants in the proceeding. The decision was of importance to the railways, because

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of its bearing on their efforts to meet truck competition.

FEDERAL COORDINATOR OF TRANSPORTATION

The office of Federal Coordinator of Transportation, created by the Emergency Railroad Transportation Act, 1933, expired by limitation June 16, 1936. The cost of the office during its three years of existence was borne by the railways. Commissioner Joseph B. Eastman, who occupied the office of Federal Coordinator and who directed the extensive surveys and studies pursued by members of his staff, has returned to his former duties as a member of the Interstate Commerce Commission.

BITUMINOUS COAL CONSERVATION ACT, 1935

The Bituminous Coal Conservation Act, 1935, was declared unconstitutional in a decision rendered May 18, 1936, by the United States Supreme Court. This law, had it remained on the statute books, would have increased the annual fuel bill of the carriers.

RAILROAD RETIREMENT ACT, 1935

In a decision handed down June 26, 1936, Justice Bailey of the District Court for the District of Columbia declared unconstitutional the tax measure companion to the Railroad Retirement Act, 1935. The decision has been appealed by the government.

It will be recalled that the Railroad Retirement Act of 1934 was held unconstitutional by the United States Supreme Court in a decision handed down May 6, 1935. That act set up a retirement system for railway employees, provided for the payment of annuities from United States Treasury funds, and levied an income tax on employees' earnings and an excise tax on employers' payrolls, both taxes payable to the United States Treasury. The act in its entirety was voided by the court's decision.

The Railroad Retirement Act, 1935, was similar in all respects except one to the act of 1934. The 1935 act

omitted the tax levies provided for in the 1934 act. Those tax levies were provided for, however, in a second act, and although the language of neither ties it in with the other, the obvious intent was to establish precisely the same pension system for railroad employees that had been invalidated by the Supreme Court.

Justice Bailey's decision voided the tax act in the 1935 set-up, but not the system of annuity payments from U. S. Treasury funds established in the Retirement Act itself. The Retirement Board began annuity payments June 1, 1936, although the Government was restrained from collecting the taxes that would offset such payments on the Government's books, and 2,100 such annuity grants had been made by the end of 1936. It is hoped that final disposition of the matter will be accomplished at an early date through action by the Supreme Court.

SHORT-TERM RAILWAY LOANS

The improved financial position of the railways in 1936 enabled them to reduce the amount of short-term loans outstanding. During the period of depression, the railways of necessity resorted to measures of temporary financing, handled through their own Railroad Credit Corporation, the Reconstruction Finance Corporation, the Public Works Administration, and through private banks.

The Railroad Credit Corporation, whose lending powers expired by limitation in May, 1933, loaned an aggregate of \$73,691,000 to participating carriers. By the end of 1936, 68 per cent of the fund had been repaid to the participants in the fund. During the first 11 months of 1936, outstanding loans due the fund were reduced some \$20,000,000.

Since organization by the Government early in 1932, the Reconstruction Finance Corporation authorized loans to railway companies, up to Dec. 1, 1936, aggregating \$517,126,000. Of that amount, \$516,206,000 was actually disbursed. Repayments to Dec. 1, 1936, totaled \$171,016,000, leaving outstanding on that date

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\$345,190,000. This represented a decrease during the first 11 months of 1936 of \$51,000,000 in the outstanding obligations of railroads to the Reconstruction Finance Corporation.

The Public Works Administration

disbursed a total of \$1,200,824,500 in loans to railroads down to Dec. 1, 1936. Many of these loans were sold to private investors through the RFC, and resulted in a profit of more than \$4,000,000 to the Government.

FREIGHT TRAFFIC OF CLASS I RAILWAYS

	1930	1935	1936
Revenue carloadings (000).....	45,717	31,518	35,900
Revenue ton-miles (000,000).....	383,450	282,037	332,000
Average revenue per ton-mile (cents).....	1.063	0.988	0.984

Loadings of revenue freight totaled 35,900,000 cars in 1936, an increase of 13.9 per cent over 1935. Loadings in 1936 averaged 84,000 more cars per week than in 1935, but were 189,000 cars per week less than in 1930.

Revenue ton-miles of freight in 1936 aggregated 332,000,000,000, an increase of 17.7 per cent over 1935, but 13.4 per cent under the 1930 level. Because of truck competition, the railroads have lost much of their short-haul traffic during the past ten years or so. This fact is evidenced in a comparison of carloadings and ton-miles. Carloadings in 1936 failed to reach the 1931 level by 3.4 per cent, but ton-miles in 1936 surpassed the 1931 level by 7.4 per cent.

Average revenues per ton-mile continue to decline. Whereas in 1926 the carriers averaged 1.081 cents per ton-mile, the average in 1936 was less than one cent per ton-mile, a decrease of 9 per cent during the period. Part of the decline in the average was due to the loss of short-haul traffic to motor trucks; part was due to decreases in rates on certain commodities.

For the third successive year, passenger-miles in 1936 were greater than the level of the preceding year, a

gratifying result following the extended period of decreases beginning with 1920 and continuing through 1933. The level of passenger-miles in 1936 was greater than in any year since 1930, and reflects the studied efforts of the carriers to increase the attractiveness of rail travel. Trains were speeded up, comforts were added in the form of air conditioning and new equipment, stream-lining was introduced, schedules were revised, fares were reduced, and in many other ways the public was made conscious of the advantages of rail travel.

Due in part to voluntary fare reductions and in part to reductions ordered by the Commission, average revenues per passenger-mile have fallen off greatly. The average of 1.85 cents per passenger-mile in 1936 represents the lowest average passenger fare since records of the Interstate Commerce Commission were begun in 1890.

Freight revenue in 1936 increased \$473,000,000, or 16.9 per cent, over 1935. Passenger revenue increased \$53,000,000, or 14.8 per cent. Mail, express, and all other revenues were also greater in 1936 than in 1935. Total operating revenues in 1936 increased \$551,000,000 over 1935, or 16

PASSENGER TRAFFIC OF CLASS I RAILWAYS

	1930	1935	1936
Revenue passenger-miles (000,000).....	26,815	18,476	22,000
Average revenue per pass.-mile (cents).....	2.717	1.935	1.850

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OPERATING REVENUES

	1930 (millions)	1935 (millions)	1936 (millions)
Freight.....	\$4,083	\$2,791	\$3,264
Passenger.....	730	358	411
Mail.....	111	92	95
Express.....	115	53	58
Other.....	242	158	175
Total.....	\$5,281	\$3,452	\$4,003

per cent. The level in 1936 was still 1930, but was \$900,000,000 greater \$1,250,000,000 less than the level in than the low point reached in 1933.

OPERATING EXPENSES

	1930 (millions)	1935 (millions)	1936 (millions)
Maintenance of Way.....	\$ 706	\$ 394	\$ 456
Maintenance of Equipment.....	1,019	682	786
Traffic.....	128	94	100
Transportation.....	1,848	1,253	1,396
General and other.....	230	170	187
Total.....	\$3,931	\$2,593	\$2,925

All major groups of operating expenses increased in 1936 over 1935. Maintenance of way expenses increased 15.7 per cent; maintenance of equipment expenses increased 15.2 per cent; traffic expenses increased 6.4 per cent; transportation expenses increased 11.4 per cent; general and other expenses increased 10 per cent. Total operating expenses in 1936 were greater than in 1935 by 12.8 per cent.

Increased operating expenses in 1936 reflect increased consumption of fuel, material and supplies, increased payrolls, and greater employment. The reviving purchasing power of the railroads acted as a stimulus to the varied industries from which the railroads buy, resulting in increased employment to those who produce the things that the railroads consume. Railroad payrolls in 1936 were more than \$150,000,000 greater than in 1935, which resulted from a reduction in part-time work as well as the addition of more names to payrolls.

Railway tax accruals for the year 1936 aggregated \$303,000,000, an increase of \$66,000,000, or 27.9 per cent, over 1935. Approximately \$40,000,-

000 of that increase represented accruals from March 1 to Dec. 31 under the provisions of the tax measure companion to the Railroad Retirement Act, 1935. Although the Government was enjoined from collecting that tax, the railroads must, in accordance with the decision of the court, continue to set up the charges on their books until final disposition of the matter is made by the Supreme Court of the United States.

Approximately \$18,000,000 of the increase in taxes noted above resulted from the one per cent tax levied on payrolls by the unemployment insurance feature of the Social Security Act, 1935. The rate of that tax will be two per cent in 1937 and three per cent in 1938 and succeeding years.

After paying operating expenses, taxes, and equipment and joint facility rents, Class I railways earned a net railway operating income of \$645,000,000 in 1936, an increase of \$145,000,000, or 29.0 per cent over 1935.

The rate of return on property investment was 2.5 per cent in 1936,

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NET EARNINGS

	1930 (millions)	1935 (millions)	1936 (millions)
Net railway operating income.....	\$869	\$500	\$645
Rate of return on property investment.....	3.3%	1.9%	2.5%
Net income after fixed charges.....	\$524	\$ 8	\$150

as compared with a return of 1.9 per cent in 1935, 3.3 per cent in 1930, and 4.8 per cent in 1929.

After meeting interest and other fixed charges in 1936, a net income of \$150,000,000 was earned. The net income after charges in 1935 was \$7,500,000, while in each of the three preceding years a deficit in net income was reported.

The foregoing statistics are aggregates for the Class I group as a whole, and they do not show the extent to which individual companies failed to earn fixed charges. Companies operating more than 40 per cent of the total Class I mileage failed to earn charges in 1936. A number of companies failed even to cover operating expenses and taxes.

RAILWAY EMPLOYEES

	1930	1935	1936
Average number (000).....	1,488	994	1,065
Aggregate compensation (000,000).....	\$2,551	\$1,644	\$1,800
Average earnings:			
per year.....	\$1,714	\$1,653	\$1,690
per hour (cents).....	67.8	68.6	69.0

The number of men and women on railway payrolls in 1936 averaged 1,065,000, an increase of 71,000 employees as compared with 1935. Aggregate compensation of employees increased by \$156,000,000, or 9.5 per cent, over 1935. Average annual earnings per employee in 1936 amounted to \$1,690, an increase of \$37 per employee. Average hourly earnings in 1936 were 69 cents, the highest point ever reached.

CONCLUSION

The year 1936 unfolded many favorable trends in railway operations, principal of which was the increasing volume of traffic. The year 1937 begins with good prospects of a continuation in upward traffic trends. Railway revenues, on the other hand,

will be affected by the expiration of the emergency freight charges and by the reduced passenger fares which were in effect only for a part of the year 1936. Thus, in order to hold their present level in 1937, from a gross revenue standpoint, the carriers must have a higher level of traffic than in 1936.

Much legislation affecting railroad operating costs will undoubtedly be brought to the attention of Congress during the 1937 session. Which, if any, of the many bills being sponsored by railroad labor leaders will receive favorable action by the Congress is at this time problematical. However, the bills stand as definite threats to a continuation of rail recovery.

HIGHWAYS

HIGHWAYS

By THOMAS H. MACDONALD

CHIEF, BUREAU OF PUBLIC ROADS, DEPARTMENT OF AGRICULTURE

NEW WORK PROGRESS

Highway work supervised by the Bureau of Public Roads in the fiscal year 1936 was notable for the large amount of work done in improving the highway system to make it adequate for the increased volume and speed of traffic. The year was marked by a large program of new work financed by authorizations of \$200,000,000 for highways and \$200,000,000 for grade-crossing elimination and protection under the Emergency Relief Appropriation Act of 1935. Coupled with the work provided for by these outright grants, an additional large program was provided for by an authorization of \$125,000,000 of Federal funds to be matched with state funds in accordance with the Federal Highway Act. A third large item in the accomplishment of the year was the work done with remaining portions of the Public Works funds authorized in 1933 and 1934. The Bureau also administered the construction of roads in various Federal areas with funds provided by several legislative acts.

In point of funds involved in projects approved, contracts awarded, and work placed under construction, the progress made considerably exceeded that of 1934, the greatest in any previous year. Plans were approved for 27,000 miles of highway at an estimated cost of \$575,000,000, including \$451,000,000 from Federal funds. Contracts were awarded for 22,200 miles at a cost of \$517,000,000, of which \$407,000,000 was to be supplied by the Federal Government. Work placed under construction totaled 23,400 miles and cost \$483,000,000, of which \$382,000,000 was from Federal funds. The 19,700 miles of road completed at a total cost of \$310,000,000, including \$253,000,000 in Federal funds, did not equal the record made in 1934 when 21,700 miles were constructed.

This work furnished direct employ-

ment of 1,673,935 man-months to an average of 139,500 men. The indirect employment in production and transportation of materials brings the total employment to 4,352,000 man-months, equivalent to an average full-time employment of 362,000 men. Assuming that each worker supports two other persons, highway construction administered by the Bureau supported over 1,000,000 persons.

THE HIGHWAY PROGRAM TO RELIEVE UNEMPLOYMENT

One of the major efforts of the Federal Government to relieve unemployment through a large-scale road-construction program began with an authorization of \$400,000,000 as a direct grant to the States by the National Industrial Recovery Act of June 16, 1933. One year later the Hayden-Cartwright Act of June 18, 1934, authorized a supplementary \$200,000,000. These funds are known as the 1934 and 1935 Public Works highway funds. The Hayden-Cartwright Act also provided \$125,000,000 as Federal aid to the States in each of the fiscal years 1936 and 1937. The emergency program was continued by allocations of \$200,000,000 for highways and \$200,000,000 for grade-crossing work, as direct grants to the States made from funds provided by the Emergency Relief Appropriation Act of April 8, 1935. These various acts also provided lesser amounts for the improvement of highways in national parks, national forests, public lands, and other Federal areas.

The work of highway construction carried out under these several acts had resulted, at the end of the last fiscal year, in the construction of 38,220 miles of road at a total cost of \$636,622,561, of which \$571,276,033 was paid by the Federal Government, and there were under construction, or approved for construction, 17,862 miles additional, involving an estimated total cost of \$357,283,044, of

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which \$270,336,054 was Federal funds. The remaining Federal funds, available for new projects, including Federal aid for the fiscal year 1937, amounted to \$191,137,913. Under the emergency grade-crossing program, projects approved or under construction included 1,407 new crossing eliminations, the reconstruction of 198 existing structures, and the protection without elimination of 322 crossings, at a total cost of \$133,524,019, of which the Federal portion was \$130,681,697. Begun within the past year, this program had already resulted in the completion of 66 new elimination structures, the reconstruction of 10 existing structures, and the installation of protective devices at one crossing, at a cost of \$3,234,563, including Federal payment of \$3,219,291. For additional work on grade crossings there remained at the end of the year \$62,099,012.

During the last three years the road construction described above and that carried on under other appropriations in Federal areas of various kinds has provided nearly 6,000,000 man-months of direct employment, or an average rate of 2,000,000 man-months per year, which is approximately double the average of employment furnished in the two years preceding the beginning of the enlarged emergency program.

WORK COMPLETED IN THE YEAR

The year's work with the funds apportioned to all States resulted in the completion of 13,790 miles of highway and the elimination of 300 railroad-highway grade crossings at a cost of \$213,747,987 in Federal funds and \$31,274,692 in State funds. The types of highway completed in the fiscal year 1936 are as follows:

	Miles
Graded and drained.....	2,276
Sand-clay, treated and untreated.....	781
Gravel, treated and untreated.....	5,932
Macadam, treated and untreated.....	472
Low-cost bituminous mix.....	1,607
Bituminous macadam.....	256
Bituminous concrete.....	417
Portland cement concrete.....	1,930
Block.....	40
Grade separations and bridges surfaced.....	79
Total.....	13,790
Grade crossings eliminated.....	300
Grade crossings protected.....	185

The completed work was divided as follows: 7,356 miles on the Federal-aid system outside of municipalities but including improvements with Federal-aid funds in municipalities, 755 miles of extensions of the system into and through cities, and 5,679 miles of secondary and feeder roads. Federal funds involved in the completed work on the Federal aid system outside of municipalities were \$107,572,926, on extensions of the Federal-aid system into and through municipalities \$46,385,602, and on secondary and feeder roads \$59,789,459.

The roads under contract at the end of the year totaled 16,709 miles and involved \$349,502,946 of Federal funds, and there were 2,210 miles approved but not yet contracted for, involving \$52,368,113 of Federal funds.

Improvements were also completed on 236 miles of the National forest-highway system bringing the total improved to date with Federal funds to 6,466 miles. Of the mileage improved to date 5,887 miles are in the Western States and Alaska and the remaining 579 miles are in the East.

In the National parks and monuments 204 miles of road were completed, bringing the total to 1,124 miles.

In addition to the above there were completed during the fiscal year 436 miles of road in public lands, 22 miles of flood damaged roads, and 2,718 miles of road in special areas to provide work relief.

STATUS OF HIGHWAY IMPROVEMENT AND FUTURE POLICIES

Accelerated by the large highway-construction program of the past three years, supported largely by Federal funds, the primary state highway systems embracing 324,000 miles and including the 227,000 miles of the Federal-aid system, have been almost completely improved with some form of surfacing and to some degree of adequacy. At the same time work administered by the Bureau, the Public Works Administration, and the Works Progress Administration has replaced the suspended activities of cities and counties and has made

large increases in the mileage of improved local roads and city streets. In the immediate future a large amount of work should be done in making more adequate for traffic than already exists those highways deliberately improved under a policy of stage construction to a degree known to be less than that ultimately desirable. There is also a need for the further extension of improvements to the more useful secondary and land-service roads, many of which still await improvement. Needed improvements on the main highways include considerable improvement of alinement, reduction of grades, and elimination of railroad grade crossings and separation of grades at intersections of heavily traveled highways routes.

While much work of the kind described is necessary, there is no reason whatever to assume that the main highway system, as a whole, is substantially inadequate. The need for extensive further improvement exists principally on a limited mileage of heavily traveled highways, especially near large cities in industrial sections and on those roads which, because of their early importance, were the first to be improved and were, therefore, constructed according to lower standards than have prevailed in more recent years. Viewing the work of past years as a whole, the system of highways created is remarkably adequate, as all who use the highways can themselves observe, and it is serving a tremendous volume of traffic.

For the past several years there has been a definite trend toward the placing of greater responsibility on the state highway departments. Only a few years ago the responsibility of these departments was confined almost entirely to the main rural highways. Now there is a large mileage of city streets which are extensions of the state systems that have been placed under state control; and 14 States have placed all or a large part of the county and local roads under the supervision of the state highway department. None of these States has turned over to the highway de-

partment the full amount of funds formerly used on the roads transferred to state administration. The state highway departments would have found themselves wholly unable to meet this new situation had not large sums of Federal money been provided for highway construction as an employment measure and had not the Federal policy been broadened to permit the improvement of all classes of highways.

State administration of the classes of highways described has very definite advantages, and the trend toward increased state supervision may be expected to continue. However, the policy presents a serious threat to the continued maintenance and stage improvement of the main state highways if funds commensurate with the increased state responsibility are not provided. It cannot be expected that Federal funds will be continued indefinitely on the scale of the last few years, but there is every indication that, if Federal support were greatly reduced at this time, States would have to spread their funds dangerously thin over the mileage they have undertaken to care for and would be forced greatly to contract their construction programs.

HIGHWAY PLANNING SURVEYS

It should be recognized that highway operations must be continuous and must be predicated on the service of highway transportation. Programs of highway improvement should be formulated on the basis of definite knowledge of need. The people of the country must be fully informed of the costs, not only present but future and continuing costs of work to be done from year to year. Recognizing the importance of these matters, the Bureau of Public Roads has urged upon all states the importance of conducting highway planning surveys embracing the entire rural highway mileage and going into all matters that may have bearing upon its improvement.

The surveys are the most comprehensive and important highway investigations yet undertaken. Federal

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funds are available for such work under the Hayden-Cartwright Act of 1934, which authorizes the use of 1½ per cent of certain funds for use in planning future work, and similar authorization is contained in subsequent legislation and rules and regulations.

At the close of the fiscal year 40 States had indicated their desire to carry on such planning surveys and work was under way in 31 States. The surveys are being conducted by the various state highway departments according to a general plan developed by the Bureau, since it is particularly important that data collected in the various States be on a comparable basis.

A Bureau representative is assigned to each State to keep contact between the Washington organization and the state survey organization. Each state organization consists of a manager, an assistant manager for each of the three main branches of the survey, and an office force and field parties as required.

The three branches of the survey are a road inventory, a traffic survey, and a financial and road-use survey. In the road inventory complete records of all existing roads will be obtained, together with a determination of their condition and the property they serve. Maps will be prepared by the States, giving for the first time a complete picture of our road system.

The traffic surveys will result in information as to the character and volume of traffic on each section of highway from which the present relative importance of each highway may be determined.

In the financial and road-use surveys studies are being made of the sources from which highway revenues come, the purposes for which they are expended, and the extent to which rural and urban residents con-

tribute to each class of road and the amount they travel each class of road. Each state survey is to be carried on for one year.

HIGHWAY SAFETY

One matter that confronts highway officials which is of great importance and which will be of much concern in the future is the eradication of those conditions that are now or may be conducive to accident, injury, and death. A prominent part of the effort to be made to correct conditions will be the elimination of highway-railroad grade crossings, and the work now begun with Federal funds should be continued. The separation of opposing streams of traffic on the most heavily traveled highways seems also to be essential. The greatly increased speed of motor-vehicle travel requires a general increase in sight distances and the elimination of obstructions to view at intersections. Occasional sharp curves and steep grades on highways that, in general, invite the driver to speed must not be tolerated. Provision for pedestrian travel, separate from that portion of the highway used by vehicles, must be made wherever the amount of pedestrian travel justifies it.

The need for corrective measures in these directions is definitely recognized and will be cared for as rapidly as available funds permit. But this alone does not give assurance of a complete solution of our highway-accident problem, since it must be recognized that such accidents are due, in large measure, not to faults in the highways, but to weaknesses of the drivers of vehicles. Correction of this situation will require the unceasing efforts of all officials concerned with law enactment, law enforcement, and highway administration, and of the great body of highway users themselves.

THE MOTOR BUS INDUSTRY

THE MOTOR BUS INDUSTRY

By CARL W. STOCKS

EDITOR, *Bus Transportation*

BUS REVENUES

All general business indicators point to improved business conditions, and this trend certainly is true of bus revenues, which are better than any single year since 1932. Recent figures compiled by the magazine *Bus Transportation* for the first nine months of 1936 showed that passenger revenues per road mile for both intercity and city operations were 3 per cent better than a year ago and 23.3 per cent ahead of operations in 1932, notwithstanding the many rate cuts that were made during the five-year period.

Results during the third quarter of 1936 were particularly interesting in view of the fact that a general cut of 40 per cent in fare rates was made June 1 to meet fare reductions by eastern railroads. For this quarter, however, passenger revenues also were at a high peak and ahead of 1935 by 2.7 per cent. Compared to 1932, there was an improvement of 19.65 per cent, all of which indicates that improved sales efforts on the part of the bus industry, better terminals and modern equipment, and the general improvement of business promotion methods, have collectively been sufficient to make bus riding attractive to larger and larger numbers despite drastic rate cuts by competitors.

INCREASE IN BUS PATRONAGE

Preliminary estimates indicate that close to 700,000,000 people rode intercity buses in the United States during the full 12 months of 1936, an all-time high, which compares with a total of 652,000,000 intercity bus passengers during 1935. Estimates were that city buses carried a total of 2,400,000,000 people during 1936.

There are now in operation about 48,000 buses in common-carrier service and approximately 75,000 in school and miscellaneous services, or

a grand total of around 123,000 buses for the entire country.

The common-carrier group includes about 25,000 buses operating in intercity service and 21,000 operating in purely city or local service. Another 2,000 buses are operated in charter or sightseeing service.

The 700,000,000 people estimated to have ridden intercity buses by the end of 1936 were expected to spend something like \$250,000,000 for that purpose. In city service, bus revenues were estimated at approximately \$157,000,000 for the year. The 3,000,000 people estimated to have gone sightseeing in buses during 1936 were expected to spend about \$8,000,000 for the pleasure.

CHANGES IN LOCAL TRANSPORT

In the past fifteen years local transportation facilities have undergone kaleidoscopic changes, with an ever-increasing trend toward the abandonment of electric railway lines and the substitution of motor bus services. Out of 983 communities listed in the 1930 Census as having 10,000 population or more, more than 400 now are served wholly by buses, local railways having in most cases been abandoned. By contrast, only 74 of these places now are served exclusively by street cars.

Ownership of local transportation facilities likewise is changing. In the early Twenties by far the greatest proportion of such facilities were controlled directly or indirectly by power and light companies which, through their local street railways, thus secured an outlet for their kilowatt output. Time has changed this picture. The private consumer with his innumerable electric household appliances, radios, refrigerators, washing machines, etc., is now the major consumer of electric power, while the private automobile, the taxicab and the independently owned gasoline bus have entered the field to compete

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with the local railway lines. The once strong and powerful holding company is finding local transport no longer the profitable undertaking of the past, simply because regimentation of such property is impossible. Locally organized companies with gasoline equipment to an increasing degree have taken over the job of furnishing community transportation.

BUS PRODUCTION

The total of new buses purchased for all types of service in 1936—intercity, local, school, etc.—probably will reach 18,500 and may possibly be even higher. Last year's total was 15,675 new units. Bus production is not only up, it's way ahead of anything the industry has ever seen. Orders for more and more new buses continue to pour in, literally swamping the bus manufacturer in a sea of business.

APPLICATION OF THE MOTOR CARRIER ACT

The intercity bus business has now been under the jurisdiction of the Interstate Commerce Commission for slightly more than 12 months. Rapid progress is being made by the I.C.C. Motor Carrier Bureau in extending regulation and supervision over an industry reaching more cities and communities than any other type of transportation.

The gigantic task of defining the rights of more than 80,000 highway applications under the "grandfather clause" of the Motor Carrier Act has been undertaken with a firm determination to protect those operations covered by the legislative intent of Congress and to avoid the certification of operations not covered by the protective provisions of the act.

To this end about 100 joint boards have been created to hear testimony upon the applications, and already reports and recommendations are being made either denying or affirming the applications. The 48 States and the District of Columbia have been divided into 16 districts. Directors and supervisors are located in principal cities to aid in the ap-

plication of the Motor Carrier Act.

As far as the public is concerned, the final result of all this regulation should be a more stabilized industry and the elimination of companies which do not conform to rules laid down to guard the comfort, safety, and convenience of the traveling public.

For the bus industry more intensive regulation and the necessity to file innumerable reports with the Bureau of Motor Carriers have brought a tremendous increase in the clerical, accounting and legal work incident to the running of a bus company, with a consequent increase in the already high cost of operating such a business.

BUS TAXATION

In reference to costs, taxes are not to be forgotten. As far as the bus industry is concerned they are increasing at an alarming rate. Intercity carriers now find that taxes are taking close to 30 per cent of their net operating revenues, while city carriers report that close to 35 per cent of their net operating revenue goes into the cash registers of the various local, state and Federal tax collectors. With the new income and excess profits tax added, motor carriers face at the close of 1936 the highest tax assessment in their history.

As an example of what the figures mean, an intercity bus company on an average pays \$1,500 a year in taxes on each bus that it operates over the highways. City companies pay an average of \$950 a bus. In either case, this is a lot of money to pay out annually as the tax on a vehicle whose initial price is seldom more than \$10,000.

RAIL COMPETITION

Mention has been made of the fact that bus revenues were up despite the fact that extensive rail cuts went into effect on June 1, 1936. The basic bus rate now tops at 1¼ cents per mile with rates in some cases as low as 1.1 cents per mile. This contrasts with a basic railroad rate, in day coaches, of 2 cents a mile, and

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of 3 cents a mile for first-class travel, the latter not including the extra for Pullman accommodations.

Companies operating in sections where there is a high-frequency of fast-rail service at 2 cents a mile have felt this competition keenly. Nevertheless, it is expected that when estimates can be compiled for the entire year the results will show that on the whole the industry in the East, where the rate cuts took effect, has taken in practically as much money as it did last year and in many individual cases has shown considerable increase. To do this, of course, the buses have had to carry many more passengers than they did in 1935. The increase in bus passengers carried by road miles during the first nine months amounted to about 7 per cent more than in 1935. In a good many cases, however, this really meant that seats were filled which probably would have been empty at a higher rate.

It should be understood, of course, that rates of $1\frac{3}{4}$ cents per bus mile and less are no new thing in the bus industry, nor to the railroads either, for that matter. Bus companies in southern and western territory have been operating at such rates for several years and have found out how to do it profitably, while, through the medium of special and week-end rates, the railroads, prior to June 2, operated a great deal of mileage at rates considerably below those now in effect. As a matter of fact, with the cessation of these special excursion rates, the traveling public in many cases began to pay more for its rail transportation than it did before the rail rates were reduced, as thousands of vacationists discovered to their cost during the past summer.

SCHOOL BUSES

As mentioned previously, there are about 75,000 buses operating in school service. These vehicles carry approximately 3,000,000 children to and from school each day during the

school season, at an annual cost of about \$55,000,000. This vast industry is in the main carried on through contracts with companies furnishing fleets of buses for the work and through contracts with many individual operators who drive their own school buses during the morning and evening hours and have other occupations during the day. The trend is toward state and school district owned and operated vehicles, but due to the great expense involved and other attendant difficulties this trend is very gradual. Estimates are that approximately 70 per cent of the school buses now are privately owned and operated under contract, leaving but 30 per cent owned and operated by the various school authorities.

NEW DEMANDS FOR BUS SERVICE

The economy, safety and increased comfort of bus travel is continually creating new demands for this service. A very noticeable trend is that more and more people are demanding extensive overland bus tours. One enterprising bus carrier in New York in the summer of 1936 promoted and successfully sold what was practically a two-months vacation on wheels, involving a circle tour of the United States which sold for more than \$400 per ticket. The sale of bus tours that run from \$75 to \$300 per ticket is an everyday occurrence during the summer season. Such tours usually include all expenses, hotels, sightseeing, etc., and frequently are of many weeks' duration.

The fact that many people are willing to spend such amounts for a bus vacation very clearly indicates that the day has passed when the bus could rightfully be called only a poor man's vehicle. The bus now very evidently has appeal to the class of rider who could go in a Pullman drawing room if he preferred to do so.

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COMMUNITY TRANSIT

By JOHN A. MILLER

EDITOR, *Transit Journal*

GAINS IN TRANSIT REVENUES

Gains in transit operating revenue were recorded every week during 1936, bringing the total for the industry in the United States to approximately \$765,200,000 as compared with \$718,756,945 in 1935, an increase of about 6½ per cent. This was the largest annual gain since the recovery movement began three years ago. As a result, the operating revenues of the transit industry were brought back very nearly to the 1931 level.

All forms of transit shared in the improvement. The total street car revenue increased in spite of the replacement of cars by trolley buses or motor buses on a considerable number of routes, as the gains on the remaining car lines more than offset the losses from the substitutions. Rapid transit revenues increased, too, but not to the same degree as street railway revenues. Earnings of electrified suburban railroads showed a moderate gain. Because of the great increase in the extent of trolley bus operation, revenues of this type of service registered a gain of nearly 40 per cent. Expansion of services was an influential factor in a gain of 27 per cent in the total earnings from urban motor bus operations.

Non-operating revenues of transit companies for 1936 were about \$125,000,000. Exact figures for the revenues of taxicab operations are not available, but they may be estimated at about \$200,000,000. Thus the total earnings of all branches of the local transportation industry were well over \$1,000,000,000 for the year.

PASSENGER CARRIAGE

Passengers carried during 1936 by the transit industry in the United States totalled a little more than 13,000,000,000, as compared with about 12,250,000,000 in 1935. This was an increase of 6.6 per cent, or slightly

more than the increase shown in operating revenues.

Electric surface railway passengers increased about 1½ per cent and rapid transit passengers about 1½ per cent. Electrified suburban railroads gained about 5 per cent. Trolley bus passengers reflected the remarkable growth of this type of service by registering an increase of nearly 40 per cent over the revised figures for 1935. Motor bus passengers also reflected the steady expansion of the service by an increase of 27 per cent.

As a result of the greater proportionate gains in trolley bus and motor bus passengers the distribution of business between the various types of service was somewhat different in 1936 from what it was in 1935. Electric surface railway passengers represented only 56 per cent of the total as compared with 59 per cent the year before. Rapid transit passengers represented 19 per cent and electrified suburban railroad passengers about 1 per cent in both years. Trolley bus passengers increased from a little under 1 per cent to a little over 1 per cent, while motor bus passengers increased from about 20 per cent to nearly 23 per cent of the total.

WAGES, COSTS AND FARES

Hourly wages of electric railway and bus operators registered a continued increase during 1936. Based on the 1913 average as 100, the Richey Wage Index rose from approximately 226 in January, 1936 to a little over 230 in December, closing the year at the highest point reached since 1931. Costs of electric railway operating materials remained relatively steady throughout the year, the Richey Cost Index, again based on 1913 as 100, rising only from 131.1 to 135.

Average fares on electric railway and bus lines registered a slight de-

COMMUNITY TRANSIT

cline during 1936. The Richey Fare Index, which is based on cash and ticket rates in 90 cities exclusive of New York, dropped from 162 to 161.8, the 1913 figure of 4.84 cents being taken as a base of 100.

RECORD VEHICLE PURCHASES

More than 5,700 new transit vehicles were ordered during 1936, setting a 23-year record. In only one year in the entire history of the industry has this number been approached, that was in 1912 when 5,384 new vehicles were purchased. In 1935, which was a year of great activity in equipment buying, the number of new units ordered was 4,826.

Increased purchases were reported for 1936 for all types of transit vehicles except rapid transit cars. Most notable was the jump in trolley bus orders from 211 in 1935 to more than 500 last year. Street car purchases increased from 100 in 1935 to nearly 400 last year. Orders for gasoline motor buses jumped from the previous high record of 3,864 in 1935 to well over 4,000 in 1936. Only with respect to rapid transit equipment was there any reduction in purchases, the total for the year 1936 being 88 two-body articulated units, or 176 cars in all.

Prospects are bright for continued activity in equipment buying. A nationwide survey recently made by *Transit Journal* showed that the purchases planned for the next five years total over 26,000 vehicles to cost about \$300,000,000. To carry out this program the industry must continue equipment purchases at the 1936 level for all of the next five years.

INCREASE IN CAR BUYING

With commercial production well under way of street cars built according to design developed by the Electric Railway Presidents' Conference Committee, 1936 witnessed a notable revival of activity in street car buying. In fact, more new street cars were ordered than in the five previous years combined. Altogether the total built or ordered amounted to nearly 400, including 100 for

Pittsburgh, 83 for Chicago, 60 for Los Angeles, 27 for Baltimore and 25 for San Diego, all built according to the P.C.C. design. The Third Avenue Railway, New York City, built 90 new cars of more conventional design in its own shops.

Higher operating speed with less noise and greater comfort for the passengers are the outstanding characteristics of the P.C.C. cars. The use of rubber in a new way in the design of the trucks and wheels has practically eliminated vibration and noise. Specially developed electrical controls and brakes permit these cars to start and stop very rapidly without discomfort to the passengers.

Another notable feature of 1936 was the order placed by the Key System for 88 two-body articulated units. They are of streamlined design arranged for operation in trains in high-speed service over the San Francisco-Oakland Trans-Bay Bridge.

TROLLEY BUS OPERATIONS

Two important and significant trolley bus developments marked the year 1936. The first was the record number of new vehicles bought, more than twice as many as in 1933. The 1936 total of 525, in fact, exceeds the total for any previous year since 1928, the year of the revival of this type of vehicle.

The second development was the widespread adoption of the single motor design. Nearly half of the vehicles ordered in 1936 were of this type. Lower first cost, lower overall weight, and less apparatus to be maintained are advantages claimed for the single-motor equipment. On the other hand, this equipment, with rheostatic control, uses more electrical energy than does a two-motor equipment using series-parallel type control, when operating in the same service.

Last year was noteworthy in the trolley bus field also for the largest single order ever placed in the United States for this type of vehicle. The Portland Traction Company ordered 120 trolley buses to inaugurate a plan for modernization of its system. The "all-service" vehicle, a

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combination trolley bus and gas-electric motor bus developed by Public Service Coordinated Transport of New Jersey, continued to play a prominent part as 100 more of these vehicles were ordered together with equipment for converting 30 gas buses into "all-service" vehicles.

Most of the trolley buses ordered last year were 40-passenger units. Eleven were 30-passenger, 146 were 36-passenger and 55 were 42-passenger vehicles. The rest of the orders, with the exception of one lot for Montreal, each seating 38 passengers, were for 40-passenger vehicles.

In extent of trolley bus operations Public Service Coordinated Transport now leads the country with 192 "all-service" units. Indianapolis is next with 152 trolley buses. Then comes Chicago with 135 while Portland, Ore. is fourth with 120. The United Electric Railways of Providence is now fifth in the number of vehicles owned with about 75 units, and Flint, Mich. is sixth on the list with 46 vehicles.

CITY TRANSIT SERVICE

Sweeping changes have taken place during the past 15 years in the form of transit service operated in the cities of the United States. Of the 376 cities shown by the 1930 Census to have populations over 25,000,

only 14 had any organized motor bus service in 1921. Even these 14 cities relied also to some extent on electric railway service. In 357 cities the electric railways rendered all the organized transit service. At that time five cities had no transit service.

Today the number of all-rail cities is only 26. A total of 206 cities have combined rail and motor bus or trolley bus service, while 140 cities are served exclusively by motor buses or trolley buses. The number of cities entirely without transit service, which dropped to only one in 1931, has now increased again to four.

All of the 13 cities over 500,000 population now have both electric railway and motor bus service. Eight of them also have trolley bus service.

Among the 80 cities between 100,000 and 500,000 population are found one all-rail city, 16 all-bus cities, and 63 combined rail and bus cities. Three of the all-bus cities have trolley buses as well as motor buses, and 18 of the combined rail-bus cities have trolley buses.

In the group of 278 cities between 25,000 and 100,000 population are 25 with all-rail service, 124 with all-bus service, and 130 with combined service. Trolley buses are operated in six of the all-bus cities and in nine of those having combined rail-bus service.

SUMMARY OF TRANSIT OPERATION IN THE UNITED STATES, 1890-1936

	Operating Revenue Jan. 1-Dec. 31	Passengers Carried Jan. 1-Dec. 31	Miles of Electri- fied Track† As of Dec. 31	Miles of Trolley Bus Route As of Dec. 31	Miles of Motor Bus Route As of Dec. 31	Number of Passen- ger Cars As of Dec. 31	Num- ber of Trolley Buses As of Dec. 31	Num- ber of Motor Buses As of Dec. 31
1890†	\$ 90,617,211	2,023,010,202*	8,123*	0	0	32,505*	0	0
1902	247,553,999	4,774,211,904*	22,577*	0	0	60,290*	0	0
1907	430,687,858	9,583,081,000	34,382*	0	0	70,016*	0	0
1912	602,511,704	12,285,342,000	41,065*	0	#	76,162*	0	#
1917	763,325,092	14,726,914,573	44,835*	0	#	79,914*	0	39
1922	1,014,727,485	16,161,846,851	43,932*	22	685	77,301*	28	370
1927	1,084,439,961	16,855,435,276	41,967	31	18,007	70,309*	29	8,854
1932	745,323,819	11,745,985,108	34,742	276	26,604	64,585	285	16,693
1933	675,710,574	11,050,400,000	33,973	378	24,061	61,413	395	16,309
1934	710,374,526	12,103,200,000	32,028	467	24,933	58,225	448	17,411
1935	718,756,945	12,201,402,000	30,612	589	26,520	54,204	648	19,100
1936	765,204,207	13,009,450,000	29,319	850	27,717	51,730	1,154	22,104

* U. S. Census.

† Does not include electrified track of truck line railroads doing exclusively long haul business.

‡ Includes cable and animal traction lines.

Not available.

MERCHANT MARINE

MERCHANT MARINE

BY PETER BAIN

CONSULTING NAVAL ARCHITECT

WORLD MERCHANT SHIPPING

Volume.—Merchant shipping during 1936 shook off much of the lethargy that for several years back had characterized its normal operating status. At the year end the progress recorded gave every indication of being not only sustained but materially accelerated early in 1937. World shipbuilding, which may be taken as reflecting the more confident outlook for the shipping industry, surpassed in output during the year by a substantial margin that of any of the four years immediately preceding. The most that can be said for the improvement registered to date is that its basis is sound. Summed up on the authority of *Lloyd's Register of Shipping* annual report for the year ended June 30, 1936, there was a greater volume of merchant shipping in operation, more merchant ships being built and less idle tonnage on hand than in the year before.

Tonnage.—Since June 30, 1935, the freight market has been relieved of something like 1,916,000 gross tons of merchant shipping, made up of 1,579,000 gross tons scrapped for breaking-up purposes and 337,000 gross tons lost through casualty and weather. That the menace of a huge laid-up tonnage has been sharply reduced and brought within reasonable distance of a normal percentage of the whole merchant shipping tonnage of the world may be appreciated from the statement by Lloyd's that, whereas three years ago laid-up tonnage totalled 12,000,000 tons, it has now been reduced to 4,250,000 tons. It is of further interest to note that while the total of world tonnage increased by 177,671 tons in the year ended June 30, 1936, vessel tonnage in commission rose from 59,000,000 to 61,000,000 gross tons. Ownership distribution of the 65,063,643 tons of world merchant shipping at mid-year 1936 showed 17,285,459

tons applicable to Great Britain and Ireland and 47,778,184 tons to other countries. In the elapsed 12 months a decrease was registered in world-owned steam tonnage; an increase in motor tonnage and a decrease in sail and non-propelled craft.

Fleet Development and Classification.—According to *Lloyd's Register of Shipping*, the present century has witnessed an unprecedented development in the mercantile fleets of the world, steam and motor tonnage having increased from a total of 24,008,883 tons in 1901 to 64,004,885 tons in 1936. Reduction of the tonnage of sailing vessels and non-propelled craft since about June, 1914 is estimated at 2,905,000 tons gross. Present proportion of such tonnage to world total tonnage is less than 2 per cent. As indicative of the great development that has taken place in the employment of steam turbines and internal combustion engines as propulsion mediums, there are now 1,632 steamships of 11,319,169 tons with turbine engines or a combination of steam turbines and reciprocating engines installed, and 6,128 vessels (inclusive of auxiliary craft) of 12,290,599 tons with internal combustion motors installed, compared with 730,000 tons and 220,000 tons respectively in 1914. Coincident with an increase of 986,000 tons in the motorship category and of 47,000 tons in that of steam turbines during the 12 months ended June 30, 1936, steamships fitted solely with reciprocating engines have decreased 1,097,000 tons. Some 99 vessels of 604,573 tons are recorded by Lloyd's as electrically propelled, the motors being supplied with current from generators driven either by steam turbines or oil engines. Of the number, 58 of 286,168 tons are credited to the United States. Of vessels exceeding 20,000 gross tons in which electrical propulsion is employed, five are British flag, two are

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owned in the United States and one is owned in France. Of 29,197 steamships and motorships of 100 gross tons and upward recorded in the 1936-37 edition of *Lloyd's Register*, 3,706 are twin screw vessels and 115 have triple or quadruple screws. Of 1,475 oil tankers of 9,195,421 tons exclusive of those of less than 1,000 tons gross, 5,119,488 tons are steamers and 4,075,933 tons have internal combustion engines installed. Slightly less than 50 per cent of world merchant marine tonnage now depends wholly upon coal, the approximate figure being 31,948,000 tons. Steamships fitted for burning oil instead of coal are represented by a total of 3,895 of 19,766,668 tons. In a classification of *Lloyd's Register* constituting the more efficient ocean-going vessels for general cargo and passenger purposes, Great Britain is credited with 10,817,970 tons, the United States, 5,148,266 tons, Germany 2,194,155 tons, Japan 2,168,338 tons, Italy 1,839,698 tons, France 1,692,545 tons, Holland 1,378,180 tons, Norway 1,015,998 tons, and other countries 3,744,978 tons, a grand total of 30,000,128 tons.

AMERICAN SHIP SUBSIDY BILL

Enactment of a Ship Subsidy Bill providing direct aid instead of mail payments and setting up a Maritime Commission may be assessed as the dominant American achievement in 1936. President Roosevelt signed the new bill June 30, 1936. As enacted, it may be said to give expression to the soundest and most noteworthy piece of domestic merchant marine legislation of many years. Embodying an intimate expression of Mr. Roosevelt's personal views, the bill may well be classified as both social and economic in its scope, embracing not only the well-being of ships and passengers but of ship officers and crews. Much more, therefore, has been accomplished than the ending of the subterfuge of mail contracts with their loans under which officials of unprofitable concerns were enabled to grant themselves huge bonuses. The policy of the Ship Subsidy Bill is "to further

the development and maintenance of an adequate and well-balanced American merchant marine; to promote the commerce of the United States, to aid in the national defense, to repeal certain legislation, and for other purposes." The bill authorizes direct subsidies up to the equivalent of 50 per cent of the construction cost of vessels to their operators. It provides, for differentials in subsidies between the East and West Coasts of the United States. The method of determining the shipbuilder's profit shall be prescribed by the Maritime Commission, provided that in computing such profits no salary of more than \$25,000 per year to any individual shall be considered as a part of the cost of building a given ship. Subsidies may be paid to ship operators after an investigation has established what differentials in operating cost exist between United States and foreign ships competing in the same trade. No contract heretofore made by the Postmaster General pursuant to the provisions of the Merchant Marine Act of 1928, for the carriage of mail shall be continued in effect after June 30, 1937. The consensus of opinion among those best qualified to judge credits the new act with being a practical effort to build up and maintain a worth-while American merchant marine at less cost than by means or methods already tried or yet proposed.

THE NEW MARITIME COMMISSION

The United States Maritime Commission is authorized to adopt all necessary rules and regulations to carry out the powers, duties and functions vested in it by the act. After the expiration of two years from the effective date of the act, the President is authorized to transfer, by Executive order, to the Interstate Commerce Commission any or all of the regulatory powers, duties, and functions which are meantime vested in the Maritime Commission. All the functions, powers and duties vested in the former United States Shipping Board by

various acts are transferred to the new Commission. The United States Shipping Board Merchant Fleet Corporation has ceased to exist. Appointments to the Maritime Commission were vested in the President. The office of vice-chairman belongs to the five constituent members of the Commission, only three of whom had been appointed and were functioning at the close of the year. They are Rear Admiral Henry A. Wiley, retired; Rear Admiral Harry G. Hamlet, Commandant of the United States Coast Guard; and George Landick, Jr., chief of the planning section of the procurement division of the United States Treasury Department. In naming the appointees on Sept. 23, President Roosevelt indicated they may or may not be named for specific terms when the President sees fit to set up the permanent commission of five members authorized by law. The members of the Maritime Commission in its permanent set-up shall continue in office for terms of two, three, four, five and six years, respectively, but their successors shall be appointed for terms of six years except that any person chosen to fill a vacancy shall be appointed only for the unexpired term of the member whom he succeeds. Not more than three of the members must belong to the same political party. Vacancies in the Commission so long as there be three members in office shall not impair the power of the Commission to execute its functions and three of the members in office shall constitute a quorum for the transaction of the business of the Commission. Each member shall receive an annual salary of \$12,000. No person shall hold office as a member of the Commission who, within three years prior to his appointment, shall have been employed by, or have had any pecuniary interest in, any carrier by water or substantial pecuniary interest in any other person who derives a substantial portion of his revenues from any business associated with ships or shipping.

On Oct. 21 the Maritime Commission projected a series of studies de-

signed to chart important future policies. The studies included a determination of what trade routes were "essential" to United States foreign commerce and national defense; whether we should build superliners like the *Queen Mary* and *Normandie*; to find the best types of vessel for specific services and to prescribe employment and wage standards for American seamen. Preliminary work on some of the studies had already been started by the Shipping Board Bureau. In the study of trade routes, the Commission expects to determine whether all existing services shall be continued and whether in some instances the losses incurred do not far outweigh the benefits meantime accruing or likely to accrue at some future date. The Commission advised steamship owners holding ocean mail contracts that Dec. 10 was the deadline for filing applications for the adjustment of such contracts in view of their termination on June 30, 1937.

SERVICEABILITY OF RESERVE FLEET

Plans for drydocking the ships in Class I and Class II of its laid-up or reserve merchant fleet to determine their serviceability for commercial purposes and their use as naval auxiliaries were disclosed Dec. 8 by Admiral Wiley, chairman of the Commission. It was revealed that negotiations to drydock the vessels in Navy Yards were then under way between the Commission and the Navy Department. Where this can not be arranged, the ships will be drydocked in private yards. There are 197 vessels in the reserve fleet. With the exception of four ex-German passenger craft which are tied up at Solomons Island, Maryland, in the Patuxent River, the ships were constructed by the United States Government during and immediately following the World War. The remaining 193 have been classified according to their condition as follows:—Class I consists of 40 of the best ships. These are suitable for operation by the Government,

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for charter or sale to American citizens or for use as naval auxiliaries. Class II consists of 131 ships with a negligible value for commercial purposes but could be utilized in the event of a national emergency. Class III consists of ships of no value except for sale as scrap. Following completion of the drydocking, the Commission will determine the disposition to be made of all Class II ships. Of the reserve fleet in the various classes, 54 are located at Staten Island, N. Y.; 71 at Fort Eustis, Va. (James River); 4 at Solomons Island, Md. (Patuxent River); 61 at New Orleans, La. (Nine Mile Point); 3 at Mobile, Ala. (Twelve Mile Island); and 4 at Seattle, Wash. (Lake Union).

LEGISLATION FOR SAFER SHIPS

Safer ships constituted during the greater part of 1936 the essence of a drive which had for its immediate objective legislation sufficiently comprehensive and potent to minimize if not wholly prevent such disasters as overtook the *Vestris*, *Morro Castle*, and *Mohawk*, in recent years. The National Committee on Safety of Life at Sea, created by the 1935 national conference on accident prevention to study conditions on American ships, submitted in January, 1936 its program to a group of steamship operators. It was pointed out that the committee was unwilling to accept the standard explanations of many maritime problems such as labor and relative safety of American vessels. Immediate strengthening of the Bureau of Navigation and Steamboat Inspection Service was cited, as was ratification by the United States of the International Convention for Safety of Life at Sea. Ratification took place on June 19 at an executive session of the United States Senate, thus ending several years refusal to allow the American merchant marine to line up with that of other world powers. As evidence of the existence of a serious problem involving the matter of merchant marine personnel, there was further cited the statement that the turnover in American ship

crews is unusually high—20 to 30 per cent—compared with less than 5 per cent on British vessels. Lack of a seagoing tradition in the United States and disharmony within the ranks were claimed to be contributory causes. The Bureau of Navigation and Steamboat Inspection Service was cited as being under-staffed, under-budgeted, and under-equipped.

Failure of the committee on admiralty and maritime law of the American Bar Association to make recommendations for legislation on safety at sea was vigorously criticized in a minority report filed Aug. 6 by James W. Ryan, admiralty lawyer. The brief majority report touching on safety legislation conceded that serious sea disasters "have shown the inadequacy of legislation covering this important subject." However, the committee judged the topic to be one of a highly technical and scientific nature and "one for Congress to deal with." It was pointed out that three separate Government bodies had been assigned the task of studying the problem in which "the public is greatly concerned at the present time." In passing, it may be noted that the National Committee on Safety at Sea frequently in its progress reports criticized members of the bar for their failure to recommend "urgently needed changes in the law." According to Mr. Ryan, shipowners must, like all other carriers and like any one else in the country, be held responsible for supplying unsafe vessels and for failure to make reasonable inspection before sending a ship to sea, also for negligence of employees in the course of the shipowner's business. The existing law is generally admitted to be obsolete and unfitted to modern conditions.

On Oct. 7 in an address before the National Safety Congress Exposition at Atlantic City, N. J., Captain J. H. Tomb, U.S.N. (retired), characterized minimum American requirements for men qualifying to "sail before the mast" as a "travesty on safety at sea." Captain Tomb claimed that an American youth,

without training in the navy, coast guard, or a state marine school, gets little or no insight into the fundamentals of his trade, and yet, by Act of Congress, he becomes an able-bodied seaman in three years whether he knows anything about his trade or otherwise. Safety was stressed on Sept. 15 at the opening of a two-day meeting of naval architects and marine engineers representing the United States, Great Britain, France, Germany, Italy, Japan, and China. Rear Admiral George H. Rock, U.S.N. (retired), president of the Society of Naval Architects and Marine Engineers, declared in an address that engineers must always consider the ideal of the absolutely safe merchant ship and make their plans accordingly. Shipowners on the other hand emphasized the necessity of building ships to the end that they be economically operated. Several speakers discussed the achievements of recent years in improving the safety of passengers at sea and, while charging that a false impression of the relative dangers of sea travel had been created by the published reports of marine accidents, urged that the need for greater safety be kept always in mind.

SPECIAL BOARD TO INVESTIGATE SEA DISASTERS

In early July, announcement was made that investigation of serious marine casualties involving loss of life would no longer be in the hands of local steamship inspectors. The new law provides that when the Government attempts to determine "whether any incompetence, misconduct, unskillfulness or willful violation of the law on the part of any licensed officer, pilot, seaman, employe, owner or agent of any vessel involved in such casualty" caused or contributed to such casualty, a special board to be appointed by the Secretary of Commerce and to consist of three members shall investigate. The chairman will be an officer or employe of the Department of Justice designated by the Attorney General; one member shall be a representative of the Bureau of Naviga-

tion and Inspection designated by the Secretary of Commerce; the other will be an officer of the Coast Guard named by the Secretary of the Treasury. In making the change, Congress acted to eliminate a condition that was severely criticized during Federal investigations of marine casualties in recent years, particularly those of the *Morro Castle* and the *Mohawk*.

The new law authorizes the Secretary of Commerce to classify marine casualties not involving loss of life according to the nature of their consequences and to designate proper hearing boards. An accident considered serious but not involving loss of life shall be investigated by a board consisting of two principal travelling inspectors and a supervising inspector of the Bureau of Navigation and Marine Inspection, while an accident of less serious nature will be investigated by a board consisting of members of the Bureau designated by the latter's director. Revision of the boundaries of the districts into which the Bureau is divided are necessitated by a provision of the new law that there be seven rather than 11 districts. Incidental to the *Morro Castle* and *Mohawk* disasters and the suits by 400 claimants against the Ward Line as owners for damages and losses suffered, the New York and Cuba Mail Steamship Co., of which the Ward Line is a subsidiary, made offer of \$1,250,000 in settlement of all claims, acceptance of which by lawyers for the various interests was announced Sept. 1. Of the total, \$890,000 was allocated to claimants in the *Morro Castle* disaster and \$360,000 to those affected by the *Mohawk* foundering. The settlements cover claims for personal injuries, deaths of relatives, and loss of cargoes.

CONSTRUCTION AND EXPANSION PLANS

Maritime Commission Program.—Contending that 350 new ships are needed to put the American merchant marine on even terms with foreign vessels, officials of the then

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existent Shipping Board Bureau reported on Sept. 3, 1936 that they were making tentative plans for a large construction program. Preparing preliminary data for the new Maritime Commission, officials said they had discovered that new merchant ships of every class were needed to strengthen and restore the existing fleet. Cooperation of operators will be necessary to carry out the projected expansion. As much as \$500,000,000 may be made available through subsidies. As a nucleus of the projected program, the Maritime Commission will have about \$100,000,000 in cash plus another \$37,000,000 of notes receivable held by the Shipping Board Bureau. In order that the shortcomings of the American merchant marine may be rather more vividly pictured as regards passenger liners on the one hand and fast freighters on the other, two striking sets of observations from among many others of a like nature seem pertinent.

Need of Government Support.—Two hours before the new British liner *Queen Mary* started up the bay to her North River pier on her maiden transatlantic crossing on June 1, the annual meeting of the stockholders of the International Mercantile Marine Co. was convened in Hoboken, N. J. Maynard M. Miller, a stockholder, pointed out that the annual session the previous year was held on the day of the first arrival of the new French liner *Normandie*. "We have had the French and British new ships," he said, "and I sincerely hope that two years hence it will be a sister ship of the *Washington* and *Manhattan*, at least, that will mark our annual meeting instead of the arrival of a new foreign ship." Mr. Miller urged that the stockholders consider it a personal responsibility to encourage the upbuilding of the American merchant marine, resorting if necessary to communicating with members of Congress their demands for a governmental program that will aid in the construction of new tonnage. P. A. S. Franklin, chairman of the board, informed Mr. Miller that

plans for a new ship had been prepared. Continuing, he said that it was interesting to note "that in the most competitive trade route—the North Atlantic—every foreign government values very highly its prestige and the revenues earned by the ships flying its flag. Foreign flag lines are heavily subsidized by their respective governments. Our progress in the upbuilding of the American merchant marine can only be as fast and as sound as public and government support will make it. I feel we are making progress and, with the continued support of the Government and the American public, we will eventually attain the high place in the merchant marine world that is rightfully ours."

Freighters.—The United States is lagging behind her natural competitors in the construction of fast freight ships. Victor J. Sudman, president of the Black Diamond Line, stated on Aug. 5 that the time had arrived when supporters of the American merchant marine should awaken to this country's predicament. American freighters of the future must be 18-knot vessels, thus we may bid farewell forever to the day of the 10½ to 14-knot ships as our average commercial carriers. The development in speed of cargo vessels has not only left the United States far behind but some other nations as well. Mr. Sudman's views were expressed in connection with an announcement of plans of the Black Diamond Line for three fast freighters to take their places in its New York-Antwerp-Rotterdam service. The freighters have been planned for several years and only await action by the new Maritime Commission. In August it was learned that naval architects had prepared plans for six new freighters projected by the Calmar Steamship Co., marine subsidiary of the Bethlehem Steel Corporation, for its intercoastal trade. Each of the freighters will cost around \$3,000,000. Designed for a deadweight carrying capacity of about 13,000 tons and 18 knots speed, the owners will be able to replace an existing fleet of 12 ships and main-

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tain a weekly service between Atlantic and Pacific coast ports at lower operating cost. The Calmar Steamship Co. program constitutes the third privately-owned American flag line to announce fleet additions within the space of a month, the Standard Shipping Co., subsidiary of the Standard Oil Co. of New Jersey, having announced on July 16 that it would build eight tankers costing \$13,000,000; the Black Diamond Line's program already noted completing the trio.

Oil Tankers.—Concurrent with the Standard Shipping Co.'s announcement, contracts were placed with three American shipyards for the building of eight oil tankers. They will be employed in transporting both gasoline and crude oil in coast-wise trade, their individual capacity being estimated at 105,000 barrels. Four of the vessels are being built by the Federal Shipbuilding and Drydock Co. at Kearny, N. J. Of deadweight capacity of 12,800 tons each, they will embody both the Isherwood system of longitudinal hull framing and the Isherwood arc form design of hull. The Bethlehem Shipbuilding Corporation will build two of the tankers at its Sparrows Point, Md. yard. Of 13,000 deadweight tons each, the two vessels will embody fluted plating bulkheads, said to be installed for the first time and will have Frear-Bethlehem designed hulls. The remaining two tankers of 12,900 deadweight tons each are being built by the Sun Shipbuilding and Dry Dock Co. at Chester, Pa. These are to be of Isherwood arcform hull design and Isherwood bracketless hull construction. Of single screw type, all eight of the tankers will be capable of twelve knots. They will be propelled by double reduction geared steam turbines, the latter being supplied with steam from water-tube boilers of Foster-Wheeler Corporation and Babcock and Wilcox Co. manufacture. Described as the most economical tankers ever constructed, they will replace present equipment rapidly becoming obsolescent. They will embody every known safety pro-

vision, being wholly fireproof down to their furniture and fittings. In addition to the foregoing, towards the year end other tankers under construction numbered four on Pan-American Petroleum Corp. account; one for the Atlantic Refining Co.; one for Texas Oil Co.; two for the Gulf Refining Co.; two for Socony-Vacuum Co., and one for Sun Oil Co.

MERCHANT MARINE ACT CHANGES

A bill carrying broad revisions of the Merchant Marine Act was signed by President Roosevelt June 25, 1936. The law amending the Merchant Marine Act has seven sections incorporating for the most part changes sponsored for several years by the International Seamen's Union of America. The changes now made law are summarized as follows: 75 per cent of the crew of every American ship, exclusive of licensed officers, must be citizens of the United States, fishing and whaling vessels and yachts excepted. Coal passers and sailors were placed in the three-watch category, thus giving them an eight-hour day at sea. An eight-hour day in port has been definitely established. A standard of proficiency has been set for able seamen. Among additional minimum standards provided are those referring to deck boys who must be physically qualified; to ordinary seamen who must have had at least six months service at sea as deck boys; to firemen, oilers and water tenders who must have had at least six months' service at sea as coal passers or wipers; and to other members of the crew who are to be provided with certificates of service authorizing them to serve in the specified capacities. Under the foregoing it will be much more difficult for impostors and totally inexperienced men to obtain jobs on American ships. There formerly was no provision for revocation of a certificate when once issued. It is now provided that certificates of service may be suspended on the same grounds and with like procedure as in the case of licensed

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officers. Because it is believed that fraudulent practices have prevailed with respects to certificates heretofore issued, all such certificates are to be surrendered and new ones issued upon due examination. The bill provides for a continuous discharge book to furnish a much-needed certified record of service and to be issued only by the duly authorized agents of the Government. Because there have been many complaints about insanitary conditions on board ships, the bill provides for regular inspection of crew quarters, also penalties for failure to report violations in this respect.

With respect to citizenship requirements of the Ship Subsidy Act, Section 302 (a) states that all licensed officers of vessels documented under the laws of the United States, as now required by law, shall be citizens of the United States, native born or completely naturalized; and upon each departure from the United States of a cargo vessel in respect of which a construction or operating subsidy has been granted, all of the crew (crew including all employees of the ship) shall be citizens of the United States, native born or completely naturalized; (b) for a period of one year from the effective date of the act, upon each departure from the United States of a passenger vessel in respect of which a construction or operating subsidy has been granted, all licensed officers shall be citizens of the United States as defined above and no less than 80 per cent of the crew (crew including all employees of the ship other than officers) shall be citizens of the United States, native born or completely naturalized, and thereafter the percentage of citizens as above defined shall be increased 5 per cent per annum until 90 per cent of the entire crew, including all licensed officers of any such vessel shall be citizens of the United States, native born or completely naturalized. All of the deck and engineer officers employed on vessels on which an operating differential subsidy is paid under authority of Title VI of the act, or employed on the Commission's vessels, after one year from

the passage of the act, shall, if eligible, be members of the United States Naval Reserve.

GENEVA MARITIME CONFERENCE

Six conventions designed to improve the working conditions of merchant marine officers and seamen were adopted Oct. 24 at the closing session of the International Maritime Commission which met at Geneva under the auspices of the International Labor Organization. The most important convention regulates the hours of work and personnel on ships in international trade. It provides an eight-hour day and a 56-hour week for deck officers and crew on all ships above 2,000 tons gross, with extra time under special circumstances. For engine rooms on ships of more than 700 gross tons it provides an eight-hour day and 56-hour week for officers with a 48-hour week for others. The convention gives stewards on passenger ships a 12-hour rest in every 20 and for those on cargo ships a 10-hour day at sea and an eight-hour day in port. As regards personnel, the convention requires three mates on ships of more than 2,000 tons gross and two mates on ships of more than 700 tons gross, with enough engineer officers for three watches in the latter category. The agreement which becomes effective on ratification by five nations, each with more than 1,000,000 tons gross of shipping was opposed early in the conference by the British Government but it had the support of the United States, France, and most of the Scandinavian countries. Robert Bruere, chief United States Government delegate, expressed satisfaction with the conference results. It is thought that the hours-and-personnel convention, if it goes into effect, will reduce the differential between the cost of United States and foreign ship operation to a very considerable degree. The convention on paid holidays provides 12 days annual vacation with pay to officers and wireless operators and nine days to all others. Another convention raises the minimum age of crew members from 14 to

15 years. The remaining conventions dealt with the liability of shipowners in cases of sickness, injury or death of seamen; sickness insurance for seamen, and minimum professional requirements for officers.

FOREIGN SHIPPING PROGRESS AND PLANNING

In the realm of foreign shipping progress, development and planning, the most noteworthy experience belongs to the advent of the British superliner *Queen Mary* as a North Atlantic addition to the Cunard White Star fleet. Early in her 1936 career she shattered both the westbound and eastbound speed records previously held by the French superliner *Normandie*. Confident that a companion ship will enable a weekly service to be maintained with two such vessels instead of three as has been the rule, the Cunard White Star have contracted for another of the same or, not improbably, an improved *Queen Mary* as service operation of that vessel may have demonstrated. A new shipping service linking New Zealand and Canada was proposed on December 7 in a report of the Imperial Shipping Committee following conferences in London of British Empire countries. The Committee declared for the building of two \$12,000,000 ships. Having in mind the abnormal number of freighter disasters on the North Atlantic in recent winters, due it is believed to steering gear defects, the British Board of Trade has issued to shipowners a series of recommendations concerning precautions that should be taken before voyages are undertaken. Announcement was made by the Swedish American Line of the awarding of a contract for the construction of a 28,000-ton passenger and freight vessel for its New York and Gothenburg service. On November 11, announcement was made that Great Britain planned suspension of payment of shipping subsidies probably after 1937 for which year \$10,000,000 has been set aside. Labor troubles

with their sporadic and continuing strikes in shipyards, on board ship and at loading and discharging wharves on both East and West coasts of the United States during the year penalized American merchant marine activity and progress to a degree unspeakably tragic in any and every respect.

MISCELLANEOUS

Great Lakes shipping enjoyed a particularly active season in 1936 both in the number of vessels employed and the commodity tonnage volume transported. On Oct. 15, 278 out of 309 American iron ore carrying vessels were in operation, constituting the greatest number since the record year 1929. Of the boats then operating 273 were in the ore trade. Iron ore movement for the season totalled 46,582,982 tons, an increase over the 1935 figures of 28,362,368 tons. Coal shipments were expected to reach 45,000,000 tons, a new record. With figures still incomplete as the year ended, bulk shipments were expected to reach if not exceed the 1930 total of 112,528,857 tons.

Transatlantic shipping carried 421,018 passengers between Jan. 1 and Sept. 16, a gain of 33,909 over the corresponding period in 1935 according to a compilation by the North Atlantic Passenger Conference.

Windjammers.—On August 11, the Department of Commerce reported that in the preceding 12 months storms, fires, and age struck 92 windjammers from the deep sea fleet flying the American flag.

Panama Canal Tolls.—Shipping interests believe that the survey authorized by Congress in April will result in legislation at the 1937 session providing for the establishment of a single system under which Panama Canal tolls will be reckoned. The matter is of world-wide importance relative to shippers and ship operators, continuing a controversy of opinion over the existing dual system of charges.

XIII. MANUFACTURES AND TRANSPORTATION

COMMERCIAL AVIATION

BY ANDREW F. HAIDUCK

BELLANCA AIRCRAFT CORPORATION

NOTABLE GAINS IN OPERATION AND MANUFACTURE

Sharp advances in activity of all branches of commercial aviation were made in 1936. Scheduled air lines continued to gain in miles flown and in passengers, mail and express carried. In July alone the airlines carried 110,690 passengers, a new record and the first time the total for domestic lines passed the 100,000 mark. Air express shipments for the first seven months showed a gain of 102 per cent over the same period in 1935.

The increased scope and tempo of aerial transportation was most dramatically illustrated by the globe girdling race of three reporters. The winner, H. R. Ekins of the New York *World-Telegram*, made the circumnavigation in 18½ days utilizing the air transport facilities of the world including two scheduled transoceanic hops, one on board the dirigible *Hindenburg* across the Atlantic, the other on the Pan American clipper across the Pacific.

For the first six months of 1936 the total number of aircraft manufactured (1,363) was 60 per cent more than that for the corresponding period of 1935. At the end of the year aircraft, engine and accessories manufacturers had a huge backlog of orders and most factories were working three shifts a day. Most of the larger manufacturers were forced to increase their floor space in order to meet reasonable delivery dates. For the first time in the history of the industry, the manufacturers were faced with a possible shortage of skilled mechanics. Already one engine manufacturer has instituted a four-year apprentice system which should insure skilled labor if the present trend continues. All indications are that the present boom will continue well into 1938.

SCHEDULED AIR TRANSPORTATION

Mileage.—Scheduled air lines in the United States flew 33,523,075 miles

in the first six months of 1936, 17 per cent increase over operations for the same period in 1935. Of the 49,191 flights scheduled on the domestic lines for the same period 45,676 were started. There were 2,066 extra sections flown, and the total number of trips completed was 45,150. Of the trips scheduled 92.85 per cent were started and 88.09 per cent of all trips scheduled, including extra sections, were completed. Of all trips started 94.57 per cent were completed.

Passengers.—Passenger traffic for the first six months was 28 per cent more than in the corresponding six months of 1935. The total number of passengers carried was 483,712 and passenger miles amounted to 204,501,624 (a passenger mile is the equivalent of one passenger carried one mile). Figures for the month of July indicate that the total increase in passengers flown will probably be 35 per cent for the year's operations. During the month 110,690 passengers were carried. This was a new record for passengers carried in a month and the first time the total for domestic lines has passed 100,000 in a month. This followed record breaking passenger totals for May and June. The average length of a passenger trip was 426 miles. Approximately 70 per cent of the seats available were occupied as contrasted with 56 per cent in 1935. The latest available figures show that this record breaking volume of traffic was sustained for the months of August and September when 106,143 and 102,239 passengers respectively were carried.

Fares.—Fares during the year averaged approximately 5.75 cents per mile. Effective Nov. 1, 1936, Transcontinental and Western Air, one of three transcontinental operators, announced a sharp reduction in fare between New York and Chicago. The original fare of \$47.95 was reduced to

COMMERCIAL AVIATION

\$39.95. This is seven dollars less than rail fare on the fastest trains. The reduction was made in part to compete with the reduced rail fares and in part to reduce the seasonal drop in traffic during the winter months. This reduction also reflects somewhat the competition among TWA, American Lines and United, all transcontinental operators. At the end of the year neither of the competitors had yet announced similar reductions.

Air Mail.—Air mail poundage also increased sharply for the first six months, the total being approximately

35 per cent greater than the previous year. Total poundage for this period was 8,297,885 pounds, whereas only 6,141,347 pounds were carried in the first half of 1935. Air mail continues to grow in popularity with the average business man who finds it necessary to write very often to distant concerns. A letter posted at the close of a business day on either coast arrives the next morning on the other coast without the loss of a business day. Interest bearing notes where time is a considerable factor are now almost universally sent by air mail.

SUMMARY OF SCHEDULED AIR LINE OPERATIONS

Domestic

	January-June 1935	July-December 1935	January-June 1936
Miles flown.....	24,642,134	30,738,219	29,078,403
Passengers carried.....	319,484	427,462	421,519
Passenger-miles flown.....	139,436,311	174,469,197	179,503,354
Passenger-seat-miles flown.....	249,921,288	322,625,242	302,541,881
Express carried—pounds.....	1,412,969	2,409,428	2,911,775
Express pound-miles flown.....	868,769,804	1,310,834,481	1,542,874,591
Mail carried—pounds.....	5,902,158	7,352,574	8,009,300
Mail pound-miles flown.....	(1) 3,658,672,070	(1) 4,604,488,568	(1) 5,164,743,645
Mail payments.....	(1)\$4,829,528.77	(1)\$5,793,733.73	(1)\$5,979,644.81

Foreign

	January-June 1935	July-December 1935	January-June 1936
Miles flown.....	4,086,994	4,072,886	4,444,672
Passengers carried.....	57,855	55,960	62,193
Passenger-miles flown.....	23,422,435	23,241,488	24,998,270
Passenger-seat-miles flown.....	(2)	(2)	(2)
Express carried—pounds.....	808,044	881,296	636,300
Express pound-miles flown.....	(2)	(2)	(2)
Mail carried—pounds.....	239,189	264,396	288,585
Mail pound-miles flown.....	(2)	(2)	(2)
Mail payments.....	\$3,355,084.61	\$3,248,254.90	\$3,350,154.34

Domestic and Foreign

	January-June 1935	July-December 1935	January-June 1936
Miles flown.....	28,729,128	34,811,105	33,523,075
Passengers carried.....	377,339	483,422	483,712
Passenger-miles flown.....	162,858,746	197,710,685	204,501,624
Passenger-seat-miles flown.....	249,921,288	322,625,242	302,541,881
Express carried—pounds.....	2,221,013	3,290,724	3,548,075
Express-pound-miles flown.....	868,769,804	1,310,834,481	1,542,874,591
Mail carried—pounds.....	6,141,347	7,616,970	8,297,885
Mail pound-miles flown.....	(1) 3,658,672,070	(1) 4,604,488,568	(1) 5,164,743,645
Mail payments.....	(1)\$8,184,613.38	(1)\$9,041,988.63	(1)\$9,329,799.15

- (1) Hawaiian air-mail operations not included.
(2) Not available.

XIII. MANUFACTURES AND TRANSPORTATION

Express.—Phenomenal gains have been made in air express. Preliminary figures for the first seven months indicated an increase of approximately 100 per cent over the same period in 1935. At least two of the major air lines announced the purchase of faster and more luxurious transports. These will supersede the present equipment, which in turn will be used entirely for the transportation of express. Already separate sections are scheduled, carrying express only. Overnight service between New York and Los Angeles has been established. With the use of more modern equipment schedules will be speeded up still more.

Personnel and Equipment.—The lines had 422 airplanes in service, employed 692 pilots, 432 co-pilots, 2,714 mechanics, and 1,535 hangar and field personnel, 264 hostesses, 41 stewards and 3,392 office workers, giving employment to a grand total of 9,070 persons. All of the major airlines use twin engine airplanes with cruising speeds of approximately 185 miles per hour. Each plane has a pilot and a co-pilot who also functions as radio operator. In addition, the crew is augmented by a hostess or a steward who attends to the various needs of the passengers. Undoubtedly the courtesy and solicitude of the hostesses and stewards has played a large part in the increasing traffic over the airways. In many instances buffet luncheons are served aloft and some of the newer planes now ordered will have complete kitchen facilities for serving hot meals.

TRANSOCEANIC AIR TRANSPORT

Pan American.—After 500,000 miles of flying mail across the Pacific, passenger service was inaugurated on Oct. 21 by Pan American. The 8,400-mile trip to Manila is now in regular scheduled operation. Already six larger versions of the famous Clipper ships have been ordered from Boeing. These will have a gross weight of approximately 82,000 pounds and accommodations for 60 passengers. The Glenn L. Martin Company is also reported to be designing a flying boat

suitable for transatlantic service and capable of carrying 60 to 70 passengers. While operations in the Pacific have been restricted entirely to our own Pan American Airways the situation in the North Atlantic takes on a somewhat international character.

Lufthansa.—Besides Pan American, the German Lufthansa and the British Imperial Airways have been feverishly completing plans and equipment necessary for operations across the North Atlantic. First honors went to the dirigible *Hindenburg* which made 10 scheduled round trips. Second honors went to the German Lufthansa for their experimental flights with the Dornier flying boats. Two of these planes made the 2,390 mile flight from the Azores to Port Washington, L. I. in 22 hours. The planes are high wing monoplanes with two engines mounted in tandem. The operations were different from normal boat operation in that the ten-ton craft are catapulted from a mother ship. According to officials of Lufthansa regular mail and express service will be started in the spring of 1937. While catapult operations are apparently satisfactory for such operations, the sudden accelerations encountered during catapulting would not be suitable for passenger traffic.

Imperial Airways.—The debut of the British version of the long distance flying boat, the *Canopus*, marks the entrance of Imperial Airways into the transatlantic race for supremacy. This flying boat with a cruising speed of 150 miles per hour has accommodations for 24 passengers and 7,000 pounds of mail and express. It is expected that experimental flights will be made early in the spring. Most informed circles are firmly convinced that at least three airlines will span the North Atlantic by the end of 1937. In this country Pan American is the only concern qualified by experience to operate such a service. According to Juan T. Trippe, president, initial test flights will be made early in 1937. The question of reciprocal landing rights has yet to be finally settled before scheduled service begins.

COMMERCIAL AVIATION

AIRPORTS

The number of airports and landing fields have remained almost the same as 1935. Whereas the total was 2,382 in 1935 the total for 1936 was 2,406 distributed as shown in the following table as of Aug. 1:

Municipal airports.....	750
Commercial airports.....	495
Department of Commerce intermediate fields.....	289
Army airdromes.....	63
Naval air stations (including Marine and Coast Guard).....	26
State-operated fields.....	43
Marked auxiliary fields.....	651
Private fields.....	64
Fields for miscellaneous Government activities.....	25
Total.....	2,406

Airports and landing fields having night-lighting equipment were as follows:

Municipal.....	252
Commercial.....	96
Intermediate.....	279
Army.....	31
Navy.....	13
State.....	9
Auxiliary.....	10
Private.....	9
Total.....	699

AIRWAYS TRAFFIC CONTROL

Increasing traffic over the airways made it necessary to establish a traffic control system. Accordingly an airways traffic control system to insure adequate spacing between airplanes flying along established air routes and to prevent congestion at airports, went into operation on July 6 under the direction of the Bureau of Air Commerce.

Traffic control is most urgently needed when the aircraft along the airway are flying in or above fog and clouds and are being navigated by instruments and radio. At such times it is especially necessary that aircraft be kept adequately separated, either horizontally or vertically or both, so that there can be no possibility of a collision. Also it is necessary that the aircraft proceed in an orderly sequence and not be bunched together on arrival at the airport, and at the same time that no schedule be unreasonably delayed. However,

the airways traffic-control stations' activities are not confined to periods of unfavorable weather. They operate continuously from early morning to midnight or later, and it is probable that they eventually will function on a 24-hour basis.

For an outbound airplane, an airways traffic-control station receives advance information concerning the flight plan, including altitude and approximate time when the airplane will arrive over the first radio check point, cruising altitude to be maintained, estimated flying time to destination, type of airplane, and any other necessary information. If this plan will involve any conflict with other traffic already in the air, the pilot is so advised and a new flight plan worked out. This is the plane's clearance.

As soon as it has taken off, word is flashed to the control room and an operator there puts an airplane marker on a map to indicate its location. The marker is moved every 15 minutes to indicate the progress that the airplane should be making at its previously calculated cruising speed, allowances for wind, weather, and other factors having previously been made. As position reports are received from the pilot the position shown by the marker is checked against these reports and corrected if necessary.

In the case of an incoming airplane, reports of departure and progress along the airway are watched in the same careful manner, and in addition its movements are coordinated with other craft approaching on the same or other airways.

When the first report on the incoming airplane is received, the airways traffic-control station at the destination computes its probable arrival time and compares this with expected arrival times of other airplanes. As the minutes pass, the station may discover that some other airplane, which took off later, is overtaking the first one. If this occurs when visibility is limited, traffic control will assign a lower flight altitude to the first airplane.

If the possible conflict arises be-

XIII. MANUFACTURES AND TRANSPORTATION

cause two or more different airplanes are due to arrive at approximately the same time on different airways, airways traffic control assigns precedence for approaching the airport. The ship which is first given clearance comes in for a landing, and others are required to hold back by reducing speed or circling over specified check points. When the first plane has established contact with the control tower and landed, the second is brought in, and so on until all are on the ground.

MISCELLANEOUS FLYING

Miscellaneous aircraft operators flew 41,517,085 miles in the first six months of 1936 and carried 531,795 passengers. Miscellaneous flying includes all civilian flying except scheduled air transportation and the category embraces miscellaneous commercial services, pleasure flying, student instructions and experimental flying. The miles flown was greater than for any six-month period since 1931 but the passenger total was not as great as that for the first half of 1935.

AIRCRAFT PRODUCTION

Producing 1,363 aircraft in the first half of 1936, the aircraft manufacturing industry in the United States made a notable gain over the corresponding part of 1935, and produced more craft than were built during the entire year 1933. Production in the first half of 1935 totaled 851; in the calendar year 1933 it was 1,324. In the light plane classification, production increased from 393 in the first half of 1935 to 622 in the first half of 1936, continuing an upward trend that had become noticeable in 1935. The total of 1,363 aircraft produced in the period January-June 1936, included 764 domestic civil aircraft, 407 airplanes built for military delivery, and 192 for export. Of those for domestic civil use, 656 were monoplanes and 108 biplanes. Among the monoplanes, cabin planes led over open cockpit craft 617 to 39. Cabin planes also were most numerous among the biplanes, there being 96 cabin craft as against 12 open cockpit.

AIRCRAFT PRODUCTION BY TYPES

(January-June, 1936, inclusive)

Monoplanes:	
Open cockpit landplanes:	
1-place.....	17
2- to 3-place.....	22
Total open.....	39
Closed landplanes:	
1-place.....	16
2-place.....	2,446
3- to 7-place.....	127
8- to 12-place.....	18
17-place and over.....	8
Closed amphibians.....	9
Closed seaplanes.....	3
Total cabin.....	617
Total monoplanes.....	2,656
Biplanes:	
Open cockpit landplanes:	
1-place.....	7
2-place.....	5
Total.....	12
Closed landplanes:	
3- to 4-place.....	36
5- to 7-place.....	60
Total cabin.....	96
Total biplanes.....	108
Total domestic civil aircraft.....	764
Military airplane deliveries.....	407
Airplanes exported.....	192
Grand Total.....	1,363

¹ Includes 1 convertible.

² Includes 3 convertible.

³ Includes 24 multi-engine craft.

⁴ Includes 1 convertible.

In addition to the above, there were also 14 gliders, 1 autogiro, and 11 lighter-than-air craft produced during this period.

At the end of the year most manufacturers were working at peak capacity. Some had a huge backlog of orders on their books insuring production well into 1937. Most of this increased activity was due to increased procurement by the military services, airlines and the private pilot. The procurement program of the Army Air Corps calls for 500 airplanes per year. The airlines have ordered faster and larger airplanes. In the smaller airplanes the two-place closed airplane for private use held the center of the stage. With quantity production the price of this type has been reduced to \$1,200.

Already it is possible to buy such a plane on the installment plan and an Aviation Credit Company has been incorporated in St. Louis to handle the financing of airplane sales.

PLANE AND ACCESSORIES EXPORTS

The superiority of American airplanes, engines and accessories has long been recognized by foreign buyers and this fact is reflected in the steadily increasing volume exported. Preliminary figures for the first seven months show that \$11,630,000 worth of equipment was exported representing 32 per cent increase over the same period in 1935. Airplanes of domestic manufacture are used on many foreign airlines. The Dutch KLM has virtually reequipped most of their airlines with Douglas monoplanes exactly similar to those used on our airlines. The marked superiority of this type has been instrumental in marked reduction in flying time between ports of entry. In addition American planes are used extensively in Switzerland, Sweden, Germany, China and Russia. Towards the end of the year it was announced that British Airways Ltd. had purchased four Lockheed Electras for airline use.

RESEARCH

N.A.C.A.—The valuable research activities of the National Advisory Committee for Aeronautics were given their full measure of recognition with the award of the Guggenheim medal for meritorious service in aviation to Dr. George W. Lewis, director of research for the organization. This committee is charged with the supervision and direction of the study of the problems of flight. The results of their research have been reflected in the marked superiority of American aircraft. The studies of the organization in 1936 have been directed towards the solution of such

problems as scale effect, engine cowling, critical airflow at high speed, ideal airfoils and compression ignition engines. A new wind tunnel operating at speeds up to 600 miles per hour has revealed some interesting phenomena in anticipation of the time when aircraft will travel at such speeds.

A new type of engine cowl, superior to the original N.C.C.A. cowl, has been developed and promises to reduce still further the drag of fuselages and engine nacelles with resultant gains in top speed. The effect of scale on the maximum lift coefficient of airfoils has been thoroughly investigated and designers have been furnished with more reliable data for proportioning of the wing area required for a given airplane. The new vertical wind tunnel has also furnished valuable information regarding the spin characteristics of airplanes. Whereas it had formerly been almost impossible to predict these characteristics it is now possible to determine the exact spin qualities from the light balsa wood model used in the tunnel.

Stratosphere.—Considerable theoretical and practical work has been done towards the solution of flight at altitudes above 30,000 feet. Theoretical calculations have shown the immense speed advantage to be gained at these altitudes. Transcontinental and Western Air has already started an extensive high altitude flight research program under the direction of D. W. Tomlinson. Already one manufacturer is designing an airplane with a hermetically sealed cabin suitable for use in the rarer atmosphere encountered at the higher altitudes. Such a cabin must have an accurately metered continuous supply of oxygen and adequate heating arrangements. Long distance commercial flights will soon be made at these high altitudes well above any storm area.

XIII. MANUFACTURES AND TRANSPORTATION

THE RADIO

By W. R. G. BAKER

GENERAL ELECTRIC COMPANY

GENERAL

The progress of radio in 1936 continued at a steady pace, with definite steps being taken to standardize and reduce to practice certain fields of research and development of past years. This was especially true in the fields of television and ultra-short wave communications.

More extensive use than ever before was made of radio and its allied field of electronics in the fields of manufacturing, transportation, construction, and police patrol. Amateur radio once more showed its practical value and the possibilities of thrills for its enthusiasts, when it largely replaced the regular methods of communication in wide areas during the disastrous spring floods. On the part of the public, there was a growing air of expectancy as the year progressed, waiting for news to break of commercial television.

F.C.C. ASSIGNMENTS

New assignments of channels in all the high frequency bands above 1530 kc were made by the Federal Communications Commission, effective after Sept. 15. These provided for relay broadcast, television, frequency modulation, facsimile, and general experimental channels, besides the ordinary communication and audio program channels. The band above 86 megacycles was left unassigned, and was to be used for experimental purposes, except the band between 400 and 401 mc. which was reserved for amateurs.

TRANSMITTERS

Apparatus.—Among advances in transmitter engineering which attracted attention during the past year were the shunt-excited grounded antenna and the Doherty high efficiency modulated power amplifier, both developments of the Bell Telephone Laboratories. The shunt fed grounded antenna practically elimi-

nates the lightning hazard on antennas and much of the expensive protection equipment which had previously been necessary before it was possible to ground the antenna. The Doherty amplifier is a high efficiency power amplifier for modulated radio frequency waves to be used in the output stages of transmitters. It enables the modulation to be done at low level without loss in efficiency, and thus avoids the use of expensive high voltage modulation equipment.

Microwaves in Remote Pick-ups.—In 1929, National Broadcasting Company built the first portable micro-wave transmitter. It was used by Floyd Gibbons at Lakehurst, N. J., in describing the arrival of the *Graf Zeppelin*. This transmitter operated at a rather low frequency, and necessitated a long single wire antenna with two men to carry the antenna. Since then, attempts have steadily been made to reduce the size of the antenna and to reduce the whole transmitter in size and weight, so that it would be readily portable by the man using it. It was obvious from the outset that, in order to use shorter antennas, it would be desirable to go to higher frequencies. This work was aided by the development of the Acorn tube which, besides being small in size, permitted stable operation at much higher frequencies than previously possible. Another aid along this line was the development of light and efficient batteries. In these ways a very compact portable one-man unit has been developed, operating at 300 megacycles. An example of the extreme portability of these units is the miniature "Top Hat" transmitter used to broadcast the Easter parade on Fifth Avenue on April 12. In this case, the microphone was in the hand of the announcer, the batteries and modulator were in his belt, and the transmitter was in his Top Hat, with the antenna projecting above it.

RECEIVERS

Automatic Frequency Control.—

It has been said that 1936 receivers were engineered for sales, but while this is true, as it is every year, it is only fair to state that more novel features of technical value appeared on receivers made in 1936 than have appeared for many years. The most striking and widely used of the new receiver features was undoubtedly automatic frequency control (A.F.C.). Ever since the widespread use of automatic volume control, there has been a need for a tuning indicator to aid the listener in tuning in a receiver since he could no longer rely on the loudness of the sound output. The technically trained operator could always tune midway between the audible hiss levels on the sides of a station, but that would not do for the public at large. During the past few years visual tuning indicators have become very popular. With these, the listener was again able to tune in a station satisfactorily. However, because the average user does not wish to take the trouble to use a tuning indicator correctly and because of the tendency of the oscillator frequency to drift, especially in the short wave bands, there was a demand for a receiver which would tune itself. This demand was met by the development of automatic frequency control, an electronic device for automatic adjustment of the oscillator frequency so that the correct intermediate frequency is produced even when the receiver is not exactly tuned *to the incoming signal*. The development of A.F.C. allowed certain tuning innovations of popular appeal to be introduced, such as telephone dial tuning, since it was no longer necessary to tune a receiver accurately. A very striking demonstration of A.F.C. is also given in some receivers where a chromatic visual tuning indicator is used, and the operation of A.F.C. can be observed as a color change in the tuning dial.

Acoustical Treatment of Cabinets.—Another prominent feature of many new receivers was acoustical treatment of the cabinets to smooth

out and extend the low frequency response range.

Negative Regeneration.—A feature of some of the past year's receivers, which is likely to come into even greater prominence in future years, is the use of negative regeneration to decrease linear and non-linear distortion in audio amplifiers. This is a very valuable tool in attaining high quality reception.

Permanent Magnet Loudspeakers.—A further useful development of the past year which is finding its way into some of the newer low power receivers is a new type of magnetic alloy. This alloy, when used as a permanent magnet, is able to supply a greater magnetic energy to a loudspeaker than could be supplied by previously used materials in magnets of the same size. In this way, a considerable increase in the sensitivity of permanent magnet loudspeakers is obtainable.

TUBES

The most important advance in commercial tubes this year was the development of the beam power tube (6L6). In the development of this tube, use was made of the newly created science of electron optics. In this tube, the electron stream is confined to certain paths and, by taking advantage of this fact, it is possible to keep the screen current low and to eliminate the suppressor altogether, allowing a dense electron cloud to act as the suppressor. In this way a tube of high power output and high efficiency can be made, with a greater power sensitivity than was obtainable before.

FACSIMILE

A fine example of the practical results achieved by the steady advance in facsimile and ultra-short wave communication, is the 3-meter relayed facsimile circuit of R.C.A. Communications from New York to Philadelphia. This is the first important commercial use of such a high frequency. Due to the fact that such short waves will only travel along the line of sight, it is necessary to relay the signal at New Brunswick

XIII. MANUFACTURES AND TRANSPORTATION

and Arney's Mount, two intermediate points between New York and Philadelphia. In this installation, resonant line transmitters are employed, and the receivers use Acorn tubes in the early stages.

NOISE

Automobile Ignition Noise.—

The general problem of noise has received a great deal of attention from many angles during the past year. In the field of automobile ignition noise, a special committee has been set up by the R.M.A. and S.A.E. to study the noise problem. The effect of ignition noise suppressors on the operation of a car has been studied by the S.A.E. and the effect was found to be small except for a slight tendency to increase missing in cold or idling engines. The R.M.A. has developed an experimental noise measuring set for the noise investigation. Previous investigation has shown that there is a strong peak in ignition noise between 30 and 40 megacycles.

Special Sources.—Attention has been directed toward finding and eliminating noise sources. A noteworthy example of this was the discovery by the Harvard Communication Laboratory that certain electro-medical machines were causing a great deal of the disturbance between 8 and 28 mc. Subsequently, a good deal of the trouble was eliminated.

Receiver Devices.—As far as receivers themselves are concerned, noise reduction antennas have become widely used. Also several "peak noise" eliminators have been used for reducing noise of the impulsive type. One of these was a scheme whereby noise peaks momentarily silence the receiver. Another uses a scheme whereby signals are automatically limited to 100% modulation in the second detector circuit.

Frequency Modulation.—The suggestion of Professor Armstrong that frequency modulation be used to reduce noise has received a great deal of consideration, and the Federal Communications Commission has assigned special channels for the broad-

casting of frequency modulated signals. Professor Armstrong has plans for the building of a 40 mc. transmitter for frequency modulated broadcasting.

HYPERFREQUENCY WAVE GUIDES

An outstanding technical advance reported during the past year was the work on hyperfrequency wave guides by Southworth, Carson, and their co-workers of the American Telephone and Telegraph Co. These showed the possibilities and characteristics of conduction of waves of frequencies greater than 1000 mc. along hollow conducting cylinders and along hollow dielectric wires. The mathematical part of this work also showed that, in a hollow cylindrical conductor, there can exist a type of wave whose attenuation decreases with frequency, probably the only example known of a guided wave which has this characteristic. These waves have the further remarkable property that they require no return path.

TELEVISION

Progress.—The progress in television has been largely along the line of improvements in the electronic scanning systems generally used at present and in their associated amplifiers. Very little has been divulged of the details of what is being done, but various demonstrations show that progress is being made.

RCA Field Tests.—Great interest is attached to the field tests of Radio Corporation of America in which a large number of television receivers are being located in New York and its surrounding territory to pick up programs broadcast from the top of the Empire State Building. From these tests, it is expected that valuable results and experience will be obtained for the furtherance of commercial television.

R.M.A. Standards.—The setting of appropriate standards is of prime importance in television. The following summary of the R.M.A. Television Committee's Recommended Standards originally presented to the

THE RADIO

F.C.C. on June 16 of this year is therefore of special interest since these will probably be the basis of future standardization in this field.

R.M.A. TELEVISION COMMITTEE'S RECOMMENDED STANDARDS

Item	R.M.A. Recommended Standard	
1. Frequency allocation	Lower limit	42 Mc.
	Upper limit	90 Mc.
	An experimental band starting at	120 Mc.
2. Channel Width		6 Mc.
3. Spacing between television and sound carriers		3.25 Mc. (approx.)
4. Relation of sound carrier to television carrier	Sound carrier higher in frequency	
5. Polarity of transmission	Negative	
6. Number of lines	441	
7. Frame Frequency	30 per second	
Field Frequency	60 per second, interlaced	
8. Aspect ratio	4:3	
9. Percentage of television signal devoted to synchronizing signals	Not less than 20%	
10. Synchronizing signal	No recommendation*	

* "Serrated" vertical signal favored by RCA.
"Narrow" vertical signal favored by Philco,
Hazeltime, Farnsworth, General Electric Co.

MANUFACTURING AND SALES

Radio sales during the year 1936 took an unprecedented leap forward. During the peak months of production an average of over 65,000 factory workers were employed at wages substantially increased over 1935. The continued popularity of short-wave reception and the extensive campaign of new features and attractions called for a greater demand for replacement of old sets than ever before. Export sales increased, auto radio sales jumped and the console-type models took a still larger lead over the table models. Due to the introduction of metal tubes, tube sales have greatly increased over those of the previous year. The ability of manufacturers to meet the early demand, the increase in buying power and the intense interest in the political issues have all helped to make 1936 the best year in radio since 1930. The estimated unit sales of home receivers and automobile receivers is put at 6,600,000 and, including export sets, at 7,200,000, an in-

crease over 1935 of 15%. The following figures, quoted from *Radio Retailing*, show sales of radio apparatus for the years 1934 and 1935.

SALES OF RADIO APPARATUS

Product	1934	1935
Radio Receiver— With tubes		
Table Models ..	2,204,000	2,050,000
	\$ 72,000,000	\$ 74,825,000
Consoles.....	1,100,000	1,600,000
	\$ 74,000,000	\$109,280,000
Motor Car Sets.	780,000	1,100,000
	\$ 32,500,000	\$ 53,350,000
Total.....	4,084,000	4,750,000
	\$178,500,000	\$237,455,000
Tubes		
At retail.....	28,642,000	34,500,000
To set makers..	26,550,000	31,000,000
Total Retail Value.....	\$ 59,548,000	\$ 67,900,000
Accessories.....	\$ 7,000,000	\$ 10,000,000
Parts Sold to Consumer.....	\$ 9,000,000	\$ 12,600,000
Batteries — Dry, Air Cell, Storage	\$ 9,200,000	\$ 11,000,000
GRAND TOTAL	\$235,628,000	\$298,600,000

BROADCASTING

With 22,400,000 or 71½% of the total homes in the United States owning radio receiving sets, broadcasting continued its growth and the improvement of its service during the past year. Chain programs averaged 16 hours a day which were divided into approximately 63% sustaining, 37% sponsored and less than 4% of all programs being taken up by advertising announcements. Sponsors spent \$120,000,000 to entertain their customers last year, \$32,000,000 for talent and \$88,000,000 for time. This is an increase of \$14,193,000 over that spent in 1934 and an increase of \$43,000,000 or nearly 100% over 1933. Newspapers used radio to a greater extent during 1936 for the broadcasting of news items. Newspapers also owned 141 of the total 630 broadcasting stations in the United States. Extended effort was made to improve the type and quality of the programs. The following analysis shows the types of program material and the

XIII. MANUFACTURES AND TRANSPORTATION

percentages of time devoted to each by the chain broadcasters during 1935:

CHAIN PROGRAMS BY TYPES

Popular Music.....	47.5%
Still "tops" in time allowance	
Classical Music.....	16.5%
Operas, symphonic, religious	
Dramatic Presentations.....	13.0%
Plays, readings, poetry	
Educations.....	7.1%
Lectures, political addresses, religion	
Sporting Events.....	1.9%
News.....	2.1%
Commentators, "spot" reviews, foreign	
Women's Programs.....	2.2%
Beauty talks, cooking, housekeeping	
Children's Hours.....	5.0%
Includes school programs	
Miscellaneous.....	4.7%
Novelties, calisthenics, special events	
	100.0%

Approximately one per cent of these programs originated in foreign countries and were re-broadcast. Approximately one per cent of the total network time is devoted to government officials.

AIRCRAFT RADIO

Increase in air schedules created a need for additional radio communication during 1936. To meet this need the Federal Communication Commission allocated additional frequencies to the aircraft branches. At the beginning of 1936 there were seven major chains using 56 frequencies for communication with aircraft and 34 frequencies for point-to-point communication. Probably the most outstanding achievement in aircraft radio development was the simultaneous transmission of radio beacon signals and voice tests at Pittsburgh, Pa. by the Bureau of Air Commerce engineers and pilots and by airline and other pilots. Installation is being provided for simultaneous operation of radio equipment on the new Nashville-Washington air-

way. The new medium-powered simultaneous stations which are to serve this airway will be at Knoxville and Smithville, Tenn. and Bristol, Pulaski, Roanoke, Lynchburg, and Gordonsville, Va.

POLICE RADIO

Short-wave radio has now become indispensable to municipal and State Police Departments throughout the country. The Federal Communication Commission has set aside two bands in the so-called medium-high-frequency range which extend from 1610 to 1712 kilocycles and from 2310 to 2490 kilocycles. Frequency assignments in the band from 1610 to 1712 kilocycles have been chiefly for State Police use and in the band from 2310 to 2490 for regular police work. Also recently assigned was the ultra-high-frequency band from 30 to 42 megacycles. The most recent demonstration in this field of development was that staged at Cleveland when a radio-equipped blimp directed police cars and traffic below.

AMATEUR RADIO

Amateur radio proved its worth and indispensability during March, the period of the flood. With fourteen States flooded and more than a dozen cities in nine States almost completely isolated due to normal communication facilities being wiped out, amateur radio stations acted as the communication link. Their effective communication facilities enabled prompt warning of authorities, immediate evacuation of threatened areas and undelayed provision for Relief and rescue aids. During 1936 high frequency communication at a wave length around five meters has come into use to a greater extent than during any previous period.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

MANUFACTURERS

AMERICAN ASSN. OF CREAMERY BUTTER MANUFACTURERS, 110 N. Franklin St., Chicago, Ill.
 AMERICAN AUTOMOBILE ASSN., Pennsylvania Ave. at 17th Street, Washington, D. C.
 AMERICAN BOTTLEERS OF CARBONATED BEVERAGES, 224 Southern Building, Washington, D. C.
 AMERICAN BRUSH MANUFACTURERS ASSN., 505 Arch St., Philadelphia, Pa.
 AMERICAN HARDWARE MANUFACTURERS ASSN., 342 Madison Ave., New York City.
 AMERICAN INSTITUTE OF STEEL CONSTRUCTION, 200 Madison Ave., New York City.
 AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.
 AMERICAN PAPER AND PULP ASSN., 122 East 42nd St., New York City.
 AMERICAN PETROLEUM INSTITUTE, 50 West 50th St., New York City.
 AMERICAN ZINC INSTITUTE, Inc., 60 E. 42nd Street, New York City.
 MELON INSTITUTE OF INDUSTRIAL RESEARCH, University of Pittsburgh, Pittsburgh, Pa.
 NATIONAL AMERICAN WHOLESALE LUMBER ASSN., 41 E. 42nd Street, New York City.
 NATIONAL ASSN. OF COTTON MANUFACTURERS, 80 Federal Street, Boston, Mass.
 NATIONAL ASSN. OF ICE INDUSTRIES, 228 N. La Salle Street, Chicago, Ill.
 NATIONAL ASSN. OF MANUFACTURERS OF THE U. S. OF AMERICA, 11 W. 42nd St., New York City.
 NATIONAL ASSN. OF WOOL MANUFACTURERS, 80 Federal Street, Boston, Mass.
 NATIONAL AUTOMOBILE CHAMBER OF COMMERCE, 366 Madison Ave., New York City.
 NATIONAL ELECTRICAL CONTRACTORS ASSN., 420 Lexington Ave., New York City.
 NATIONAL ELECTRICAL MANUFACTUR-

ERS ASSN., 155 E. 44th Street, New York City.
 NATIONAL FEDERATION OF TEXTILES, 10 East 40th St., New York City.
 NATIONAL LUMBER MANUFACTURERS ASSN., 1337 Connecticut Ave., Washington, D. C.
 NATIONAL MACHINE TOOL BUILDERS ASSN., 1220 Guarantee Title Bldg., Cleveland, O.
 NATIONAL METAL TRADES ASSN., 444 Madison Ave., New York City.
 RUBBER MANUFACTURERS ASSN., 250 W. 57th St., New York City.
 UNITED STATES BREWERS ASSN., 21 East 40th St., New York City.
 UNITED TYPOTHETAE OF AMERICA, Tower Building, 14th and K Sts., N. W., Washington, D. C.

TRANSPORTATION AND COMMUNICATION

AERIAL LEAGUE OF AMERICA, 280 Madison Ave., New York City.
 AMERICAN ASSN. OF RAILROAD SUPERINTENDENTS, 111 Union Station, St. Louis, Mo.
 AMERICAN RAILWAY ENGINEERING ASSN., 59 E. Van Buren St., Chicago, Ill.
 AMERICAN ROAD BUILDERS ASSN., 95 National Press Building, Washington, D. C.
 AMERICAN STEAMSHIP OWNERS ASSN., 11 Broadway, New York City.
 ASSOCIATED TRAFFIC CLUBS OF AMERICA, 917 Majestic Bldg., Indianapolis, Ind.
 ASSOCIATION OF AMERICAN RAILROADS, Transportation Building, 17th and H Streets, Washington, D. C.
 CRUFT LABORATORY, Harvard University, Cambridge, Mass.
 INTERNATIONAL AMATEUR RADIO UNION, 38 LaSalle Road, West Hartford, Conn.
 MARITIME ASSN. OF THE PORT OF NEW YORK, 80 Broad St., New York City.
 NATIONAL AERONAUTIC ASSN., 1909 Massachusetts Ave., Washington, D. C.
 NATIONAL COUNCIL OF AMERICAN IMPORTERS AND TRADERS, Inc., 45 E. 17th St., New York City.

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NATIONAL HIGHWAY USERS CONFERENCE, National Press Building, Washington, D. C.

NATIONAL HIGHWAYS ASSN., Bass River, Cape Cod, Mass.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE, 1 La Salle Street Bldg., Chicago, Ill.

NATIONAL TRAFFIC SERVICE ASSN., 105 N. Moore St., New York City.

NORTH AMERICAN EXPORT GRAIN

ASSN., INC., 2 Broadway, New York City.

RAILROAD OWNERS ASSN., 502 Chandler Building, Washington, D. C.

RAILWAY BUSINESS ASSN., 38 S. Dearborn St., Chicago, Ill.

UNITED STATES BUREAU OF STANDARDS, Washington, D. C.

UNITED STATES NAVAL RESEARCH LABORATORY, Washington, D. C.

PART FIVE

SOCIAL CONDITIONS AND AIMS

DIVISION XIV

IMMIGRATION AND POPULATION

RACE CONDITIONS IN AMERICA

BY HARRY H. LAUGHLIN

CARNEGIE INSTITUTION OF WASHINGTON

DETERMINING FACTORS

For any selected country or region the five major factors which determine the race, the number, the geographic distribution and the quality of the human population are as follows:

1. Basic status. For the selected basic generation or date, given the population status by number, distribution, race and inborn quality.
2. Differential migration. Who, by race, number and inborn quality during the basic generation, move into and who move out of the particular region.
3. Differential mate selection. For this same basic human generation, who mates with whom in reference to numbers, geographic distribution, race and inborn quality of the individual mates.
4. Differential fertility. The number of children which these several matings produce in reference to race and inborn quality.
5. Differential survival. Which, by race and inborn quality, of the offspring produced survive and remain in the particular region to become the parents of the next succeeding generation.

MIGRATION IN THE DETERMINATION OF NUMBER, RACE AND FAMILY-STOCK

The United States, in common with the several other Pan American countries*, is an immigrant-receiving nation which is also a sovereign immigration-controlling unit. In the re peopling of the Western Hemisphere, during the approximately 15 human generations which have elapsed since the discovery of the New World in 1492, all of the countries and regions of the Western Hemisphere have been essentially immigrant-receiving rather than emigrant-exporting nations. In no previous history of human migration and racial re peopling has so great a portion of the earth's territory been re peopling by new races in so few human generations. Those races which came early after the discovery and made conquests and settlements constituted the human seed-stock which determined in a large measure

* See "The Codification and Analysis of the Immigration-control Laws of each of the Several Countries of Pan-America as Expressed by their Respective (a) National Constitutions, (b) Statute Laws, (c) International Treaties, and (d) Administrative Regulations, as of January 1, 1936. Analysis Volume. A Statement of the Basic Problem, and of the Main Findings in the Analysis of Pan-American Immigration-control Law and Policy." By Harry H. Laughlin of the Eugenics Record Office of the Carnegie Institution of Washington, October, 1936.

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the racial constitution and the cultural nature of human life in their respective new Pan American countries during their next succeeding generations. Each immigrant family which arrived during the seed-stock period has as a rule constituted a racial and cultural influence many times that of the family of the same size and fertility who came as immigrants a few generations later.

One human generation represents one turnover in the population. The new born of native stock of one generation, recruited by the immigrants of the time, take the place of their parental stocks and of the later emigrants who dominated the last generations. In general there are about three human generations to a century. This means that, beginning with the native Indian population in 1492 Pan American population has experienced a turnover in individual numbers about 14 times, that is, approximately 15 different sets of people have constituted the population of the New World since the discovery. Within each set a "naturally selected" portion, plus certain immigrant-recruits, have become the parents of their succeeding generations. Thus Pan American population has evolved in race and quality. There is, of course, always much overlapping of generations due to difference in age among members of the same population at any given time, but this does not invalidate the rule of population change or turnover by generations.

IMMIGRATION CONTROL

As the several colonies and nations of Pan America began to achieve national consciousness as the result of the establishment and increase of their new national human seed-stocks, they forthwith began to establish their own racial ideals and, in consequence, as sovereign nations, by statute law to set up their own standards for the admission of would-be immigrants into their territories. The new nations learned to look upon immigrants not only from the economic and military points of view but also to inquire into the biologi-

cal aspect of the matter. Immigration began to be limited in reference to numbers, race and family-stock quality—physical, mental and spiritual.

It is particularly fitting, in 1936, when preparations have been made for a meeting of the Pan American Peace Conference in Buenos Aires, that immigration-control by law as a factor in the determination of race conditions in Pan America, including the United States, be made the special subject of this particular year's analysis of the underlying causes of race conditions in the New World. Just how the several nations of the Western Hemisphere have reacted to the possibilities of influencing their respective future populations to move toward their own ideals of race and quality through immigration-control is shown by the immigrant standards which these nations severally have set up. The standards in reference to numbers, race, quality and occupation of admissible immigrants for each of the 21 Pan American republics, the three self-governed dominions and the 17 European possessed colonies in Pan America in force Jan. 1, 1936 are as follows.:

IMMIGRANT STANDARDS IN THE UNITED STATES

The main basis of admissibility of immigrants is the selective quota Act of 1924. The annual quota of any given nation (for the fiscal year beginning July 1, 1927 and for each fiscal year thereafter) shall be a number which bears the same ratio to 150,000, as the number of inhabitants in continental United States in 1920 having the particular national origin, bears to the number of inhabitants in the continental United States in 1920, but the minimum quota of any nationality shall be 100. There are no numerical limitations for non-quota immigrants. Residents of Canada, Newfoundland, Canal Zone, and the 21 independent republics of Pan America, American Indians born in Canada, and natives of the Virgin Islands receive the privilege of non-quota-immigrant rating. The an-

RACE CONDITIONS IN AMERICA

nual quota for the Philippine Islands is 50.

The inhabitants of islands, not United States possessions, adjacent to the continent of Asia, and the inhabitants of the continent of Asia within certain boundaries termed "The Barred Zone" are excluded. Orientals coming to the United States directly or by way of Mexico are excluded. No one who is ineligible for naturalization may be admitted as an immigrant; this allows admission to white persons and persons of African descent only; it excludes, among all other races, the Japanese, Chinese and the Hindu.

The following classes are excluded: Unaccompanied children under 16, persons with mental or physical defect which might interfere with his or her ability to earn a living, anarchists, illiterates, contract laborers, vagrants, polygamists, criminals, aged persons, cripples, paupers, professional beggars, and those lacking in funds.

Persons with certain cultural occupations, not in competition with American supply and otherwise admissible, receive the privilege of non-quota rating.

CANADA

All numerical limitations are established entirely at the discretion of the Governor General. There are some regulations for providing financial aid to certain desirable and needed immigrants. There are extensive provisions for safeguarding the rights of immigrants. All government assistance to immigrants ceased Dec. 31, 1931. British subjects by birth or naturalization in Great Britain or Dominions and United States citizens with sufficient means are preferred. Only Asiatics are excluded.

Persons of classes and occupations which do not give good promise of becoming readily assimilated in Canada, most labor classes, and those not in possession of an amount of money such as is prescribed on a basis of nationality, race, occupation, and destination are excluded. Mental and physical defectives, chronic al-

coholics, immoral persons, illiterates, criminals, beggars, vagrants, certain charity immigrants, those guilty of espionage or high treason towards His Majesty, and anarchists are debarred. A health certificate is required for entry. Agriculturists with sufficient means, skilled laborers, professional actors, artists, lecturers, singers, and female domestic help are preferred.

ARGENTINA

In accordance with an early fundamental law, Argentina established an open-door policy and provided liberal provisions for immigration promotion; but recent decrees have established a selective basis intended to improve quality even at the expense of reduction in numbers. There is no reference to any regulation concerning racial discrimination or favor other than the exemption of Brazilians from a requirement to pay the entry fee. There are treaties with certain other countries for the encouragement of tourist travel. Passports are issued free to Brazilian tourists.

Decrees of the last eight years have raised the entrance standards. Diseased persons, mentally unfit, those having defects that incapacitate them for work, persons over 60 or under 15 years of age, criminals, anyone useless in the concept of immigration, and those who are unable to show proof of having a job or property value or bank deposit amounting to \$1,500 are debarred. Each immigrant must furnish a certificate of good health, good conduct, a special trachoma certificate, proof of non-mendicancy, and a work-contract in order to enter. Preference is given to farmers, ranchers, scientists, teachers and promoters of industry. Manufacturers, railroad men, professional entertainers and professors are admitted except when likely to compete too strongly with citizens. Past treaties and decrees favored free migration of all people, but recent decrees require work-contracts or assured means of support.

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BOLIVIA

Bolivia imposes no restrictions regarding the immigration or emigration of persons in so far as numbers are concerned. Persons of the Latin races, Germans, Slavs and Japanese are preferred; Russians, Poles, Jews and Balkans are restricted races, while Arabs, Mongols, Negroes, Mulattos and Mohammedans are excluded. Foreigners who are married to Bolivian women are admitted. Degenerates, paupers, rebels, radicals, criminals and agitators are debarred. Each immigrant must have a profession and a visible means of support or a work-contract, must be free from mental and physical defects which might interfere with his ability to earn a living, and be not over 60 years of age. A health certificate, examination of blood and sputum, a record of all previous illnesses, a certificate of good conduct, letters of introduction, a clear crime record for the preceding five years, a vaccination certificate and a trachoma certificate are required for entry. Preference is given to agriculturists, industrialists and intellectuals and to certain specialized labor groups.

BRAZIL

For each given foreign country there is a numerical restriction to 2% of the nationals of such country who settled in Brazil within the last 50 years. The Japanese are tolerated, but not preferred; and Gypsies are excluded; but except for these two races, the numerical quota is the determining regulation in regard to race. Persons with mental and physical handicaps, persons under 18 years of age or persons over 60 years of age, criminals and agitators may not enter. Immigrants must have a health certificate, a full anthropological description, a clear crime record, a work-contract or evidence of sufficient funds, a vaccination certificate, a trachoma certificate, letters of recommendation and a birth certificate in order to enter. Agriculturists are preferred, and money, land and transportation facilities are

available to encourage the immigration of that group.

CHILE

This country maintains an open-door policy, with no numerical limitations. There are some special regulations for the encouragement of immigration. There are no restrictions in regard to race. Radicals, criminals and those unable to earn a living are debarred. A health certificate, an anthropological description with special description of any physical abnormality, a vaccination certificate, a trachoma certificate, a certificate of good conduct and a birth certificate are required for entry. Agriculturists, dairymen, iron workers, mechanics and those with certain other trades are preferred.

COLOMBIA

Except for the specific limitations indicated under "Race," Colombia imposes no numerical restrictions on immigration. The admission of Bulgarians, Jews, Chinese, Libyans, Poles, Russians, Greeks, Lithuanians, Roumanians, Syrians, Turks and Yugoslavians is restricted to ten individuals each year. There are no other restrictions on the racial basis. Criminals, agitators and persons under 18 or over 60 years of age are debarred. A health certificate, anthropological measurements, ability to speak Spanish, a clear crime record, a job or \$200 in cash, a vaccination certificate, a trachoma certificate, a certificate of good conduct and letters of introduction to Consul are required for entrance into Colombia. Agriculturists, industrialists and educated persons are preferred.

COSTA RICA

Open-door policy is maintained by this country, with no numerical limitations, but no special regulations for the encouragement of immigration are provided for in the law. Central Americans whose governments favor Costa Ricans are exempt from the necessity of paying the 1,000 colones entrance fee. Arabs, Turks, Armenians, Gypsies, Chinese, Coolies, and Syrians are excluded.

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Persons with tuberculosis, leprosy, bubonic plague, or other grave and communicable disease, invalids, those physically incapable of labor, insane, idiots, imbeciles, indicted or escaped criminals, anarchists and indigent persons are debarred unless they can prove they are not in danger of becoming a public charge. A health certificate, a smallpox vaccination certificate, an anthropological description, a trachoma certificate, a good conduct certificate and letters of recommendation are required for entry. No occupational limitations are set by Costa Rica.

CUBA

There are no numerical limitations, nor, on the other hand, provisions for the encouragement of immigration to Cuba. Spaniards and Americans are preferred. Spaniards receive a reduction of \$140 on their entrance fee. Chinese, Gypsies and West Indians coming from unquarantined ports are excluded. Those with mental or physical disease, those under 16 or over 60 years of age, rebels, criminals, agitators and those without a job or sufficient means of support are excluded. A health certificate, anthropological description, good conduct certificate, are required for entry. No occupational limitations are set.

ECUADOR

There are no numerical limitations to immigration but definite provisions for its promotion are made. European and American white races are preferred. Chinese are excluded. Those diseased physically or mentally, members of religious bodies, criminals, and agitators are debarred. All immigrants must have a health certificate, an anthropological description, a vaccination certificate, a trachoma certificate, a certificate of good conduct, and letters of recommendation for entrance into Ecuador. Outstanding intellectuals, outstanding men of science, literature, industry, and economics are preferred. A person must be able to speak Spanish.

GUATEMALA

There are no numerical limitations, but rather some special regulations for the encouragement of immigration to Guatemala. Central Americans are preferred. The establishment of enterprises owned or managed by natives of Turkey, Syria, Libya, Arabia, Greece, Palestine, Armenia, Egypt, Afghan, India, Bulgaria, Russia and North Africa is prohibited, though such persons may become naturalized. Negroes may stay for six months with a deposit of 200 pesos in gold in addition to the entrance fee. Mongolians and Gypsies are excluded. Chinese must have a special license and deposit 50 quetzales. Persons under 15 years of age, criminals, agitators and those without a position or not in possession of 100 quetzales are debarred. A health certificate, anthropological description, vaccination certificate, trachoma certificate, certificate of good conduct and birth certificate are required for entry. No occupational limitations are set.

HAITI

There is no numerical limitation, nor, on the other hand, provision for special encouragement of immigration. There are no regulations regarding racial restrictions except for the exclusion of Syrians. The only requirement as regards quality of the immigrant for admission to Haiti is that the person be able to give proof of sufficient financial status.

HONDURAS

An open-door policy is maintained, and certain aids in the form of land, special agents and contracts are provided. Caucasian races are preferred. Persons from Central America and domiciled foreigners are exempt from a requirement to pay the \$100 entry deposit. Czechoslovaks, Poles and those from the Near East must gain employment within six months in order to remain. Negroes, Gypsies and Chinese are excluded. Persons over 60 years of age, persons with physical or mental defects, beggars, vagrants, prostitutes, drug-peddlers, polygamists, ex-convicts, anarchists and those

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without means of support or work-contracts are debarred. A health certificate, a smallpox vaccination certificate, a certificate of good conduct and letters of introduction are required for entry.

MEXICO

There are no numerical nor racial discriminations. Temporarily, all laborers except industrial workers, agriculturists, professors, artists, salesmen and executives are excluded. Agitators, persons with jail sentences, and persons lacking sufficient funds for their support or a Government contract are excluded. Persons must have a health certificate, a smallpox vaccination certificate, and a good conduct certificate in order to enter. University students with credentials are exempted from a requirement to pay the entrance fee. Agriculturists, industrial workers and executives are preferred.

NICARAGUA

There are no numerical limitations, nor, on the other hand, provisions for the encouragement of immigration to Nicaragua. Persons from Central America, United States, Germany, and Cuba are preferred. Those from Central America, United States and Germany are exempt from entrance fee. Chinese, Arabs, Syrians, Armenians, Negroes, Gypsies and Coolies are excluded except by special permission and deposit of \$1,000. Foreigners married to Nicaraguan women may enter. Persons over 80 years of age, children, persons with contagious diseases, physically unfit persons, persons of distinctly subnormal intelligence, criminals, persons unable to show possession of \$100, beggars, prostitutes and political agitators are excluded. A health certificate, anthropological description and certificate of good conduct are required for entrance.

PANAMA

There are some exemptions and other provisions for the encouragement of immigration but no numerical limitations. Europeans and Americans are preferred. Chinese,

Syrians, Hindus and Negroes who do not have Spanish as their native language are excluded. Foreigners married to Panamanian women and having children registered in the Civil Record are admitted. Persons must be of sound mind and body, and have 200 balboas minimum capital or a reliable profession in order to enter. A health certificate, a police certificate of good conduct, a smallpox vaccination certificate, a trachoma certificate, letters of introduction and a birth certificate are required for entry. Contract laborers are encouraged, and trade workers are restricted.

PARAGUAY

No numerical limitations are imposed, and several provisions for the encouragement of immigration are in force. Americans and Europeans are referred. Members of the yellow and black races are excluded. Delinquents, persons over seventy years of age, anarchists, social agitators, immoral characters, beggars, those with contagious diseases, convicts, criminals, fugitives from justice, persons with unsound mind or body and those unable to earn a living are debarred. A health certificate, a certificate of good character, a smallpox vaccination certificate, a trachoma certificate, letters of introduction and a birth certificate are required. Immigrants with a minimum capital of 50 pesos are granted free transportation and other privileges. Persons objectionable in the discretion of the authorities are debarred. Agriculturists, professionals, technical experts, trade workers are preferred.

PERU

An open-door policy is maintained by this country, established by law of Sept. 22, 1920. There are several special provisions for the encouragement of immigration. There are no numerical limitations. Americans and Europeans are preferred. Turks are tolerated. No race is excluded. Political agitators, disturbers of the social order, anarchists, persons of unsound mind or body, persons who refuse to obey institutions and persons

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unable to earn a living are debarred. Immigrants must give proof of possession of sufficient funds for their needs or show a letter from their employer in Peru, or provide a bond for \$500. A health certificate, a smallpox vaccination certificate, a trachoma certificate, a good conduct certificate and a birth certificate are required for entry.

EL SALVADOR

Salvador grants asylum and refuge by Constitutional provision, except in cases of extradition. There are no special provisions for the encouragement of immigration, and no numerical limitations. Salvador has prohibited the establishment of enterprises owned or managed by natives of Palestine, Turkey, China, Libya, Syria, Egypt, Iraq, Hindustan or Armenia, even though such persons may be naturalized (936). Chinese, Negroes, Malaysians, Libyans, Arabs, Turks, Gypsies, Syrians and those from Palestine, unless they are former residents who have not been absent more than one year, are excluded. Those afflicted with contagious diseases, professional gamblers, prostitutes, anarchists, terrorists advocating violence, old people (no specific age limit is stated), persons with unsound mind or body, persons unable to earn a living, ex-convicts and social agitators are excluded. Immigrants must give proof of the possession of \$500, or, if employed by a commercial company in Salvador, must show that their salary is sufficient to enable them to live. A health certificate, a smallpox vaccination certificate, a trachoma certificate, a good conduct certificate, and a birth certificate are required for entrance.

DOMINICAN REPUBLIC

There are no numerical limitations, nor special provisions for the encouragement of immigration into the Dominican Republic. Members of the white races are preferred. Mongols and Africans must pay 500 pesos in order to enter. Those suffering with physical or mental defects,

anarchists, rebels, old people without means of support, and those unable to earn a living are debarred. A deposit of 50 pesos, or a government contract is required. A health certificate, and a certificate of good conduct are required. Agriculturalists are preferred.

URUGUAY

The constitutional provisions establish practically an open-door policy, but later decrees limit the policy to operate only in the case of political refugees. There are no numerical limitations, nor, on the other hand, provisions for encouraging immigration. Gypsies, Africans, and Asiatics are excluded when thought unfit. Present decrees prevent all immigration except near kin, or foreigners who have children or near relatives in country. Persons may come in under the 20% ineligible tolerance of family of five. Persons over 60 years of age unless forming part of a family 80% of whom are eligible for entry and are able to earn a living, those suffering from mental and physical disorders, diseased, those unable to earn a living, habitual drunkards, criminals, those without a work contract or 600 pesos are excluded. A health certificate, a smallpox certificate, a certificate of good conduct, an anthropological description, and a birth certificate are required for entry. Skilled laborers are admitted when needed.

VENEZUELA

There are no numerical limitations, nor any provisions for encouraging immigration. The country is a temporary refuge and asylum. No races are excluded. Criminals, agitators, those physically or mentally deficient, those unable to make entry deposit, immoral characters, indigents, and unaccompanied persons under 16 years of age are excluded. A health certificate, a good conduct certificate, a birth certificate, an anthropological description, a smallpox vaccination certificate, a trachoma certificate, letters of introduction, and an

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affidavit of peaceful intentions are required for entry. Contract laborers and teachers are exempt from the necessity of depositing 1,000 bolivars entry fee. Agriculturalists seem to be preferred.

POPULATION STATISTICS

BY LEON E. TRUESDELL

CHIEF STATISTICIAN FOR POPULATION, U. S. BUREAU OF THE CENSUS

POPULATION GROWTH

The population of continental United States on April 1, 1930, the date of the Fifteenth Census, was 122,775,046, as compared with 105,710,620 on Jan. 1, 1920, the date of the Fourteenth Census. In 1790, when the first census was taken, the population was only 3,929,214. Each subsequent decennial census up to 1860 showed an increase of about one-third over the preceding one; from 1860 to 1910 the decennial increase was around 20 or 25 per cent; for the last two census decades the figures have been only 15 or 16 per cent; and for the period from 1930 to 1940 the increase seems likely to be not more than 7 or 8 per cent.

One important factor in the recent slowing down of the population increase is the change in the situation with respect to immigration. Between 1920 and 1930 the average annual net immigration was around 300,000, while

since 1930 the excess of departures over arrivals has averaged about 50,000 per year; that is, net immigration has been a minus quantity. Further, the birth rate which had fallen from 24.3 in 1921 to 18.9 in 1930, has continued its downward course since that date, standing in 1935 at 16.9 per thousand of the population. The net result of these changes has been to reduce the average annual increase of the population to about 900,000, as compared with about 1,700,000 between 1920 and 1930.

To meet the demand for current figures for use in computing birth rates, per capita costs, etc., the population of the United States has been estimated for July 1 of each year since 1930 on the basis of the annual data on births, deaths, immigration, and emigration. The estimate for July 1, 1936, is 128,429,000. The figures for the other years are presented in the following table:

ESTIMATED POPULATION OF THE UNITED STATES: 1930 TO 1936

Year	Estimated Population	Increase over Preceding Year		Increase over 1930 Census	
		Amount	Per Cent	Amount	Per Cent
1936 (July 1).....	128,429,000	908,000	0.71	5,654,000	4.61
1935 (July 1).....	127,521,000	895,000	0.71	4,746,000	3.87
1934 (July 1).....	126,626,000	856,000	0.68	3,851,000	3.14
1933 (July 1).....	125,770,000	796,000	0.64	2,995,000	2.44
1932 (July 1).....	124,974,000	861,000	0.69	2,199,000	1.79
1931 (July 1).....	124,113,000	1,022,000	0.83	1,338,000	1.09
1930 (July 1).....	123,091,000	.....	.....	316,000	0.26
1930 census (April 1).....	122,775,046	.....	.....	.....	.....

On the basis of probable trends in the birthrate and death rate, and assuming that there will be no considerable immigration from foreign countries, the population of the United States has been estimated or forecast for several decades into the future, as

follows: For 1940, 132,000,000; for 1950, 139,000,000; for 1960, 144,000,000. Some time after 1970, under these assumed conditions, the population will reach its maximum, and a slow decline will begin.

The most significant data on births

POPULATION STATISTICS

and deaths which need to be considered in any study of probable future trends in population are presented in the following table, which gives for each year from 1920 to 1935 the number of births and deaths reported in the registration area, with estimates for the United States as a whole, the annual rates per thousand of the population, and a 3-year moving average rate which indicates the changes with

less variation on account of fortuitous conditions than the single-year rates. Estimated totals for the United States are also given for the years from 1920 up to the time (1933) when all States were included in the registration area; and in the final column, the excess of births over deaths, or the actual amount of the reported natural increase of the population.

BIRTHS AND DEATHS IN THE REGISTRATION AREA: 1920 TO 1935

(The birth registration area included 59.8 per cent of the total population of the country in 1920 and the death registration area 82.2 per cent; in 1933 both areas had been extended to include the entire country.)

Year	BIRTHS			DEATHS			Estimated totals for the United States ¹ (thousands)		
	Number	Rate per 1,000 population		Number	Rate per 1,000 population		Births	Deaths	Excess of births over deaths
		Annual	3-year moving average		Annual	3-year moving average			
1935....	2,155,105	16.9	....	1,392,752	10.9	....	2,155	1,393	762
1934....	2,167,636	17.1	16.9	1,396,903	11.0	10.9	2,168	1,397	771
1933....	2,081,232	16.6	17.1	1,342,106	10.7	10.9	2,081	1,342	739
1932....	2,074,042	17.4	17.3	1,308,529	10.9	10.9	2,178	1,360	818
1931....	2,112,760	18.0	18.1	1,322,589	11.1	11.1	2,232	1,374	858
1930....	2,203,958	18.9	18.6	1,343,358	11.3	11.4	2,328	1,396	932
1929....	2,169,920	18.9	19.2	1,386,363	11.9	11.8	2,291	1,448	843
1928....	2,233,149	19.7	19.7	1,378,675	12.1	11.8	2,368	1,446	922
1927....	2,137,836	20.6	20.3	1,236,949	11.4	11.9	2,440	1,352	1,088
1926....	1,856,068	20.6	20.9	1,285,927	12.2	11.8	2,412	1,428	984
1925....	1,878,880	21.4	21.6	1,219,019	11.8	12.0	2,467	1,360	1,107
1924....	1,930,614	22.6	22.2	1,173,990	11.8	12.0	2,534	1,328	1,206
1923....	1,792,646	22.4	22.5	1,193,017	12.3	12.0	2,478	1,360	1,118
1922....	1,774,911	22.5	23.1	1,101,863	11.8	11.9	2,456	1,290	1,166
1921....	1,714,261	24.3	23.5	1,032,009	11.6	12.2	2,622	1,253	1,369
1920....	1,508,874	23.7	....	1,142,558	13.1	....	2,522	1,389	1,133

¹ Based on the assumption that the rates per 1,000 are the same as for the Registration Area.

CHANGES IN CHARACTER OF POPULATION

In addition to the decline in the rate of increase there will be important changes in the character of the population, notably an increase in the proportion of elderly persons and a decline in the proportion of children. These changes in the age composition of our people will be merely a continuation of what has been going on for many decades. The number of children under 5, for example, formed 15.4 per cent of the total population in 1860, 12.2 per cent in 1890, and only 9.3 per cent in 1930. On the other hand, persons 70 years old and over formed 1.5 per cent of the popu-

lation in 1860, 2.2 per cent in 1890, and 3.1 per cent in 1930.

These changes have been even more rapid since 1930, as indicated by the figures in the following table, which gives the age distribution of the population according to the censuses of 1920 and 1930, with estimated figures for 1935 based mainly on survival rates.

Other changes in population characteristics which we may expect in the next few years include a rather rapid decline in the importance of the problems incidental to the absorption of a large number of European immigrants, and the practical disappear-

XIV. IMMIGRATION AND POPULATION

POPULATION BY 5-YEAR AGE PERIODS: 1920 TO 1935

Age (years)	Number of Persons			Per Cent of Total		
	1935*	1930	1920	1935	1930	1920
All ages.....	127,341,000	122,775,046	105,710,620	100.0	100.0	100.0
Under 10.....	22,340,000	24,051,999	22,971,305	17.5	19.6	21.7
0 to 4.....	.....	11,444,390	11,573,230	.....	9.3	10.9
5 to 9.....	.....	12,607,609	11,398,075	.....	10.3	10.8
10 to 14.....	12,486,000	12,004,877	10,641,137	9.8	9.8	10.1
15 to 19.....	11,870,000	11,552,115	9,430,556	9.3	9.4	8.9
20 to 24.....	11,382,000	10,870,378	9,277,021	8.9	8.9	8.8
25 to 29.....	10,632,000	9,833,608	9,086,491	8.3	8.0	8.6
30 to 34.....	9,578,000	9,120,421	8,071,193	7.5	7.4	7.6
35 to 39.....	8,834,000	9,208,645	7,775,281	6.9	7.5	7.4
40 to 44.....	8,870,000	7,990,195	6,345,557	7.0	6.5	6.0
45 to 49.....	7,622,000	7,042,279	5,763,620	6.0	5.7	5.5
50 to 54.....	6,617,000	5,975,804	4,734,873	5.2	4.9	4.5
55 to 59.....	5,494,000	4,645,677	3,549,124	4.3	3.8	3.4
60 to 64.....	4,118,000	3,751,221	2,982,548	3.2	3.1	2.8
65 to 69.....	3,149,000	2,770,605	2,068,475	2.5	2.3	2.0
70 to 74.....	2,131,000	1,950,004	1,395,036	1.7	1.6	1.3
75 to 79.....	1,315,000	1,106,390	856,560	1.0	0.9	0.8
80 to 84.....	611,000	534,676	402,779	0.5	0.4	0.4
85 and over.....	292,000	272,130	210,365	0.2	0.2	0.2
Age unknown.....	.....	94,022	148,699	...	0.1	0.1

* Census Bureau estimate for April 1, 1935.

ance of illiteracy as a serious problem in any part of the country, since even now the percentage of illiteracy in the younger age groups is nowhere very high.

OLD AGE PENSIONERS

Of particular significance in these

days of widespread and intense interest in old age pensions is the rapid increase in the number of old persons, that is, of persons who would be eligible for pensions on the basis of attained age. The number of such persons can be computed with a satisfactory degree of accuracy for several

POPULATION 55 YEARS OLD AND OVER IN ACCUMULATIVE AGE GROUPS: 1870-1960

Year	Number of Persons (thousands)					Per Cent of Total			
	All ages	55 and over	60 and over	65 and over	70 and over	55 and over	60 and over	65 and over	70 and over
Census:									
1870	38,558	2,809	1,933	1,154	669	7.3	5.0	3.0	1.7
1880	50,156	4,099	2,828	1,723	998	8.2	5.6	3.4	2.0
1890	62,622	5,548	3,875	2,417	1,407	8.9	6.2	3.9	2.2
1900	75,995	7,083	4,872	3,080	1,778	9.3	6.4	4.1	2.3
1910	91,972	9,004	6,217	3,950	2,270	9.8	6.8	4.3	2.5
1920	105,711	11,465	7,916	4,933	2,865	10.8	7.5	4.7	2.7
1930	122,775	15,031	10,385	6,634	3,863	12.2	8.5	5.4	3.1
Estimates:									
1935 ¹	127,341	17,110	11,616	7,498	4,349	13.4	9.1	5.9	3.4
1940 ²	132,000	19,326	13,244	8,379	4,912	14.6	10.0	6.3	3.7
1950 ²	139,000	24,216	16,836	10,953	6,395	17.4	12.1	7.9	4.6
1960 ²	144,000	28,412	20,757	14,247	8,514	19.7	14.4	9.9	5.9

¹ Census Bureau estimates for April 1.

² Estimates for 1940, 1950, and 1960 based largely on work done by Thompson and Whelpton, of the Scripps Foundation for Research in Population Problems. See especially P. K. Whelpton, "An Empirical Method of Calculating Future Population," in *Journal of American Statistical Association*, September, 1936, pp. 457-473.

POPULATION STATISTICS

years subsequent to the census, and even for two or three decades into the future, by applying available survival rates to the numbers now in the various age groups of middle life. Estimates of the population 65 years old and over obtained by this process are as follows: For 1935, 7,498,000, or 5.9 per cent of the population; for 1940, 8,379,000, or 6.3 per cent; for 1950, 10,953,000, or 7.9 per cent; for 1960, 14,247,000, or 9.9 per cent.

More detailed figures for cumulative age groups from recent censuses, with estimates up to 1960, are presented in the following table:

Some calculations of the cost of universal old age pensions, on the basis of the population estimates just presented, may be of interest. For example, to pay the moderate pension of \$30 per month to all persons 65 years of age and over in 1935 would cost \$2,700,000,000, or more than the entire income and profits tax receipts of the Federal Government in the prosperous year 1929; while to pay a pension of \$200 per month to all persons 60 years old and over would cost about \$28,000,000,000, or more than half the entire national income as estimated for 1935, and would leave less than \$216 per annum (\$18 per month) for all of the population under 60 years of age—those by whose labors the entire income would be produced.

URBAN-RURAL POPULATION

Of the population returned in the 1930 census, 68,954,823, or 56.2 per cent, were living in urban territory, that is, in cities and other incorporated places having 2,500 inhabitants or more. The percentage of the population urban in 1920 was 51.4; in 1910, 45.8; in 1900, 40.0; in 1890, 35.4; in 1880, 28.6. There has been, therefore, a continuous and rather rapid increase in the proportion of the population living in cities. There are some indications that the increase in the relative importance of the urban population has been less rapid since 1930, but these are not conclusive.

The rural population in 1930, that is, the population living outside urban territory as defined above, was 53,820,223, comprising 30,157,513 persons

living on farms in rural territory, and 23,662,710 not living on farms (rural-nonfarm or "village" population).

A classification showing the population living in incorporated places of various sizes is presented in the following table:

POPULATION IN URBAN GROUPS AND RURAL AREAS: 1930

Area	Places	Popula- tion	Per Cent
Total.....	16,598	122,775,046	100.0
Urban territory....	3,165	68,954,823	56.2
Places of—			
1,000,000 or more....	5	15,064,555	12.3
500,000 to 1,000,000	8	5,763,987	4.7
250,000 to 500,000	24	7,956,228	6.5
100,000 to 250,000	56	7,540,966	6.1
50,000 to 100,000	98	6,491,448	5.3
25,000 to 50,000	185	6,425,693	5.2
10,000 to 25,000	606	9,097,200	7.4
5,000 to 10,000	851	5,897,156	4.8
2,500 to 5,000	1,332	4,717,590	3.8
Rural territory....	13,433	53,820,223	43.8
Incorporated places of—			
1,000 to 2,500.....	3,087	4,820,707	3.9
Under 1,000.....	10,346	4,362,746	3.6
Other rural.....	.....	44,636,770	36.4

GAINFUL WORKERS

Persons 10 years old and over who usually work at a gainful occupation, even though temporarily unemployed at the time of the census, are counted as gainful workers. The number of male gainful workers as thus defined in 1930 was 38,077,804, comprising 61.3 per cent of the total male population, and 76.2 per cent of the male population 10 years old and over. The number of female gainful workers was 10,752,116, comprising 17.7 per cent of the total female population and 22.0 per cent of that 10 years old and over. These percentages, however, do not give a fair idea of the extent to which persons in what might be termed the normal working ages are returned as gainful workers. Of the male population 25 to 49 years of age, more than 97 per cent were counted as gainful workers in 1930; of the male population 50 to 54 years of age, 95.7 per cent; of that 55 to 59 years of age, 93 per cent; of that 60 to 64, 86.8 per cent.

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The following table shows the distribution of the gainful workers in 1930 by general divisions of occupations.

**GAINFUL WORKERS
BY GENERAL DIVISIONS OF
OCCUPATIONS: 1930**

Occupation group	Male	Female
All occupations.....	38,077,804	10,752,116
Agriculture.....	9,562,059	909,939
Forestry and fishing....	250,140	329
Extraction of minerals...	983,564	759
Manufacturing and mechanical industries...	12,224,345	1,886,307
Transportation and communication.....	3,561,943	281,204
Trade.....	5,118,787	962,680
Public service (not elsewhere classified).....	838,622	17,583
Professional service....	1,727,650	1,526,234
Domestic and personal service.....	1,772,200	3,180,251
Clerical occupations....	2,038,494	1,986,830

FAMILIES

The term "family," as it has been used in the Census Reports for several decades, signifies a group of persons, whether related by blood or not, who live together as one household, usually sharing the same table. While most of the 1930 tabulations have been made for private families alone, excluding those groups not made up of related persons, it is necessary for comparative purposes to use the broader definition. There were 29,904,663 private families returned in 1930, and 75,178 quasi-family groups (mainly institutions, hotels, and lodging houses) which would have been included in the count of families under the rules employed in 1920 and earlier censuses. This means a total of 29,979,841, which may be compared with 24,351,676 families or households reported in 1920. The average population per family on this more inclusive basis was 4.1 in 1930, 4.3 in 1920, 4.5 in 1910, 4.7 in 1900, and 4.9 in 1891. There has thus been a decline in the average population per family amounting to two-tenths of a person per decade since 1890.

The following table presents, first, a classification of the whole number of private families returned in 1930 by

sex of head, and, second, a classification of those families with a man as head by age of head.

**FAMILIES BY SEX AND AGE
OF HEAD: 1930**

Sex and age of head	Number of families	Per cent
All families.....	29,904,663	100.0
Families with—		
Man head.....	26,111,761	87.3
Woman head.....	3,792,902	12.7
Families with man head, by age:		
All ages.....	26,111,761	100.0
Under 25 years.....	1,266,056	4.8
25 to 34 years.....	5,878,711	22.5
35 to 44 years.....	7,082,391	27.1
45 to 54 years.....	5,743,244	22.0
55 to 64 years.....	3,680,822	14.1
65 to 74 years.....	1,880,969	7.2
75 years and over.....	561,223	2.1
unknown.....	18,345	0.1

POPULATION BY FAMILY STATUS

The total population in 1930 (122,775,046) was distributed according to family status as follows: 114,019,010 related persons in private families (including 2,357,463 in 1-person families); 2,962,861 persons in quasi-family groups; 4,961,193 lodgers in private families; 523,922 servants, living in private families not having lodgers (absolute minimum of 1 per family), and 308,060 other persons, made up chiefly of additional servants (in families having lodgers, and excess over 1 per family) and the small number of "guests" and other non-related, non-lodger persons enumerated with the private family.

1935 CENSUS OF PUERTO RICO

A census of Puerto Rico was taken as of Dec. 1, 1935, by the Puerto Rico Reconstruction Administration. This showed a population of 1,723,534, as compared with 1,543,913 on April 1, 1930. The new census represents an increase of 179,621, or 11.6 per cent, during the 5½ years since 1930. This is equivalent to an annual increase of 1.95 per cent, as compared with an annual increase of 1.69 per cent between 1920 and 1930.

The average number of inhabitants

POPULATION STATISTICS

per square mile in Puerto Rico in 1935 was 506.8, as compared with 454.0 in 1930. Since the population of the Island depends mainly on agriculture for its support, this density of population, which is exceeded among the States only in highly industrialized areas like Rhode Island, New Jersey, and Massachusetts, indicates, in connection with the continued rapid increase of the population, the approach of serious problems of over-population in the Island.

MARRIAGE AND DIVORCE STATISTICS

Statistics of marriage and divorce in the United States have been compiled for various periods beginning with 1887, and were published annually by the Census Bureau from 1922 to 1932. The figures for 1933, 1934, and 1935 have been estimated on the basis of available state compilations and are presented, together with the official annual figures, in the following table:

STATISTICAL SUMMARIES

Population data under a number of other important classifications, such as marital condition, illiteracy, country of origin, mother tongue, and value or rental of home, are contained in the articles on population in *THE AMERICAN YEAR BOOK* for 1933 (pages 577 to 584); for 1934 (pages 548 to 554), and for 1935 (pages 532 to 538). The most compact official publication providing a fairly complete summary of the population statistics is the *Abstract of the Fifteenth Census*. A briefer set of summary tables is contained in the *Statistical Abstract*, which may be available in some libraries not having the *Census Abstract*. The results of the 1935 census of Puerto Rico are presented in *Population Bulletin No. 1: Number and Distribution of Inhabitants*, which may be obtained either from the Census Bureau or from the Puerto Rico Reconstruction Administration.

MARRIAGES AND DIVORCES: 1922 TO 1935

Year	Number of marriages	Number of divorces	Per 1,000 of estimated population		Marriages per 1,000 of female population 15-44	Divorces per 100 marriages
			Marriages	Divorces		
1935 ¹	1,327,000	218,000	10.41	1.71	43.25	16.4
1934 ¹	1,302,000	204,000	10.28	1.61	42.84	15.7
1933 ¹	1,098,000	165,000	8.74	1.31	36.47	15.0
1932.....	981,903	160,338	7.87	1.28	32.93	16.3
1931.....	1,060,914	183,664	8.55	1.48	35.91	17.3
1930.....	1,126,856	191,591	9.15	1.56	38.53	17.0
1929.....	1,232,559	201,468	10.14	1.66	42.81	16.3
1928.....	1,182,497	195,939	9.87	1.63	41.72	16.6
1927.....	1,201,053	192,037	10.16	1.62	43.05	16.0
1926.....	1,202,574	180,853	10.32	1.55	43.81	15.0
1925.....	1,188,334	175,449	10.35	1.53	44.01	14.8
1924.....	1,184,574	170,952	10.46	1.51	44.62	14.4
1923.....	1,229,784	165,096	11.03	1.48	47.11	13.4
1922.....	1,134,151	148,815	10.32	1.35	44.21	13.1

¹ Estimated by S. A. Stouffer and Lyle M. Spencer, on basis of reports on marriages from 31 States and on divorces from 20 States. See *Annals of the American Academy of Political and Social Science*, November, 1936, page 58.

XIV. IMMIGRATION AND POPULATION

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

- AMERICAN COLONIZATION SOCIETY, 516 Colorado Bldg., Washington, D. C.
- AMERICAN ETHNOLOGICAL SOCIETY, American Museum of Natural History, New York City.
- AMERICAN JEWISH COMMITTEE, 461 Fourth Ave., New York City.
- ANCIENT ORDER OF HIBERNIANS, 1648 Westmont Ave., Pittsburgh, Pa.
- BAVARIAN NATIONAL ASSN., OF N. A., 80 West 102nd St., New York City.
- CENTRO VASCO AMERICANO SOCIETY, 48½ Cherry St., New York City.
- ENGLISH-SPEAKING UNION OF THE U. S., 19 W. 44th St., New York City.
- FEDERATION DE L'ALLIANCE FRANCAISE, 22 East 60th St., New York City.
- FEDERATION OF POLISH JEWS IN AMERICA, 225 W. 34th Street, New York City.
- FOREIGN LANGUAGE PUBLISHERS' ASSN. OF THE U. S., Inc., 110 E. 42nd St., New York City.
- HEBREW SHELTERING AND IMMIGRANT AID SOCIETY OF AMERICA, 425 Lafayette St., New York City.
- HOLLAND SOCIETY OF N. Y., 90 West Street, New York City.
- HUGUENOT SOCIETY OF AMERICA, 2 W. 45th St., New York City.
- HUNGARIAN SOCIETY OF N. Y., 1440 Broadway, New York City.
- INDIAN RIGHTS ASSN., 301 S. Seventeenth St., Philadelphia, Pa.
- JAPANESE ASSN., Inc., 1819 Broadway, New York City.
- JEWISH NATIONAL WORKERS' ALLIANCE OF AMERICA, 404 Fourth Ave., New York City.
- JEWISH WELFARE BOARD, 200 Fifth Ave., New York City.
- LAKE MOHONK INDIAN CONFERENCE, Mohonk Lake, N. Y.
- LITHUANIAN ALLIANCE OF AMERICA, 307 W. 30th St., New York City.
- NATIONAL ASSN. FOR ADVANCEMENT OF COLORED PEOPLE, 69 Fifth Ave., New York City.
- NATIONAL COUNCIL OF JEWISH WOMEN, 625 Madison Ave., New York City.
- NATURALIZATION AID LEAGUE, 175 E. Broadway, New York City.
- NETHERLAND AMERICAN FOUNDATION, 274 Madison Ave., New York City.
- ORDINE FIELI D'ITALIA IN AMERICA, 225 Lafayette St., New York City.
- POLISH FEDERATION OF NEW YORK CITY, Inc., 23 St. Marks Place, New York City.
- POLISH NATIONAL ALLIANCE, 1406-8 West Division St., Chicago, Ill.
- RUSSIAN NATIONAL SOCIETY, 5 Columbus Circle, New York City.
- SCRIPPS FOUNDATION FOR RESEARCH IN POPULATION PROBLEMS, Miami University, Oxford, O.
- SONS OF ITALY, 377 Broadway, New York City.
- UNITED ROUMANIAN JEWS OF AMERICA, Inc., 799 Broadway, New York City.
- YOUNG JUDEA, Inc., 111 Fifth Ave., New York City.
- YOUNG MEN'S HEBREW ASSN., Lexington Ave. and 92nd St., New York City.
- YOUNG WOMEN'S HEBREW ASSOCIATION, 31 West 110th Street, New York City.
- ZIONIST ORGANIZATION OF AMERICA, 111 Fifth Ave., New York City.

DIVISION XV

SOCIAL PROBLEMS AND CONDITIONS

PUBLIC AND PRIVATE SOCIAL WORK

By C. C. CARSTENS

EXECUTIVE DIRECTOR, CHILD WELFARE LEAGUE OF AMERICA

PUBLIC SERVICE

The outstanding development in social work during 1936 was in the field of public service. There were created new departments of public welfare in Indiana, Kentucky, Louisiana, and Oklahoma. As a rule these departments have come about so as to be in a position to dispense public aid and assistance from state or Federal funds. Most of these departments have provision for the supervision of children's agencies and some also provide for the direct care of children. They also provide the mechanism which the Children's Bureau of the Social Security Board requires for the proper supervision and direction of services made possible under the Social Security Act.

SOCIAL SECURITY ACT OF 1935

Provisions.—The Social Security Act was signed Aug. 14, 1935, but because no appropriation was made at that time it did not actually come into force until Feb., 1936. This act makes provision for a number of services and appropriations which are as follows:

Grants to States for Old Age Assistance.—Under the act there was authorized an appropriation for each fiscal year of \$49,750,000 for payments to the States which have submitted state plans for old age assistance approved by the Social Security Board. A state plan to be approved must "be effective in all political subdivisions of the state, and,

if administered by them, be mandatory upon them." It requires further that there shall be established or designated a single state agency to administer the plan. It provides further that the Secretary of the Treasury shall pay to each State an amount equal to half of the total of the sums expended in assistance to each individual who is 65 years of age or older and is not an inmate of a public institution, and that such expenditure with reference to each individual must not exceed \$30 a month. During November, 1936, old age assistance was rendered to individuals in 40 States, the Territory of Hawaii and the District of Columbia. The total number of individuals receiving such assistance was 1,034,300 and the total amount paid to these recipients from Federal, state and local funds, exclusive of administrative expenses, was \$19,353,939, an average per recipient of \$18.71. The number of recipients per thousand of the estimated population, 65 years and over, July 1, 1936, was 125 varying greatly among the States. The lowest number was in the District of Columbia, 31. The highest was in Colorado, 364.

Federal Old Age Benefits.—Under the act there was also established an old age reserve account from which every qualified individual shall be entitled to receive on the date when he attains the age of 65 years or on Jan. 1, 1942, whichever is the later, and ending on the day of his death, an old age benefit payable monthly. There

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were excluded as ineligible to this benefit persons performing agricultural labor, those performing domestic service in a private home and casual labor, together with certain other smaller groups. The money from which these payments are to be made will come from taxes laid upon employers of eight or more employees. Effective Jan. 1, 1937 the rate is 1% of the total wages; for 1938, 2%; and for years thereafter, 3%. The administration of old age benefits is wholly Federal.

Grants to States for Unemployment Compensation.—There was also appropriated the sum of \$4,000,000 for the fiscal year ended June 30, 1936 to assist the States in the administration of their unemployment compensation laws; and the sum of \$49,000,000 for each fiscal year thereafter. The administration of unemployment compensation is left to the States with supervision by the Social Security Board. In order that the various States may take advantage of the benefits of the law, it is necessary for the States to pass statutes for unemployment compensation satisfactory to the Social Security Board. Seventeen States had passed such laws previous to July 1, 1936; 19 additional States have had special sessions of their legislatures since July 1. Their laws were approved as of Dec. 31, 1936, making a total of 36 States whose plans and laws have been approved by the Society Security Board.

Grants to States for Aid to the Blind.—Under one of the titles of the Social Security Act the sum of \$3,000,000 was authorized to be appropriated from which payments are made to the States which have submitted state plans for aid to the blind satisfactory to the Social Security Board. Such a plan must provide that "it shall be in effect in all political subdivisions of the state and if administered by them, be mandatory upon them." It also requires that there shall be financial participation by the State. The state unit administering assistance to the aged and rendering aid to dependent children has in all States been designated as

the agency for administering aid to the blind. At the end of 1936, 27 States and the District of Columbia had presented plans that were approved by the Social Security Board and the total number of individuals aided in 24 of these and the District of Columbia was 28,290, to whom total payments have been made of \$720,017 during the month of November, 1936, from Federal, state and local funds. This was an average of \$25.45 per recipient. These sums vary in accordance with amounts provided from state and local funds. The average payment in California per recipient was \$35.20 per month, while the lowest payment of any State was \$8.93.

AID TO DEPENDENT CHILDREN

Title IV of the act makes grants to the States for aid to dependent children. A dependent child is defined under the act as one under 16 years of age who has been deprived of parental support or care because of the death, continued absence from home, or incapacity, either physical or mental, of the parent. He must be living in a home maintained by one of his parents or grandparents or by one of the following relatives: brother or sister, step-mother or step-father, step-brother or step-sister, uncle or aunt.

"A state plan for aid to dependent children under this title must provide that it shall be in effect in all political subdivisions of the state, and, if administered by them, be mandatory upon them." The law also provides that the state participate financially in the program whether the counties do or not. Any plan which imposes a residence requirement of more than one year immediately preceding the application for aid cannot be accepted.

Previous to the establishment of this Federal program, 46 States, the District of Columbia and Hawaii had laws on their statute books providing for aid to dependent children in their own homes under certain conditions. These conditions, however, in certain of the States were in conflict with the requirements of the Social Security

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Act. Not many States had legislative sessions during 1936. In 1937, however, 43 States have regular sessions of their legislatures and opportunities will be presented to modify their statutes to conform with the Federal act. None-the-less at the end of 1936, 27 States and the District of Columbia had submitted plans which were accepted by the Social Security Board. During November, 1936, \$3,996,525 was paid in these States to 134,669 families involving 338,188 children. This total is the amount paid from Federal, state and local funds excluding administrative expenses.

The impetus that Federal expenditures for aid to dependent children has brought is shown by the fact that the number of children aided in this partial list of States is already substantially larger than the total number of children aided in all the States having statutes a year previously.

By the provision that the law must apply to all political subdivisions in any State before any one subdivision may benefit, many children who had previously failed to receive benefits of mothers' aid statutes under the Social Security Act are being included in such benefits. The law provides for a refund of one third of the expenditures in any State whose plans have been approved. This grant in aid has become the usual stimulus for additional expenditures by States and local units that such grants in aid have produced elsewhere.

MATERNAL AND CHILD HEALTH SERVICES

There has also been appropriated under the Social Security Act the sum of \$3,800,000 which may be allotted to States whose plans for maternal and child health in the respective States have been approved by the chief of the Children's Bureau. Such a plan provides for the financial participation by the States matching dollar for dollar, for the administering of the plan or the supervision of the administration of the plan by the state health agency. This part of the statute makes effective once more the services that were under-

taken by the Children's Bureau on a grant in aid plan previous to 1931. But in the present plan children of any age may be benefited instead of limiting the service as previously to infancy.

On Dec. 4, 1936, 50 state and territorial plans had been approved. During the five months of the fiscal year of 1936 that the Social Security Act was in operation (Feb. 1 to June 30) the total payments to the States were \$1,252,436.22, and during the six months of 1936, ended Dec. 31, payments amounting to \$1,258,701.01, were made.

State plans for maternal and health services vary widely. As health needs and health services differ, so the measures to meet them must necessarily differ. As the result of social security legislation, plans submitted by all of the 51 States and territories by June 1936, provided for the establishment of bureaus or divisions of maternal and child health as major divisions of the child health departments with physicians as directors. These figures are in contrast with 22 States only which, in June 1934, had directors of divisions of maternal and child health on a full-time basis.

The service in the various States is under the direction of state departments in every case. However, the Children's Bureau of the United States Department of Labor, whose approval of plans is necessary, has a special field consultant in obstetrics, four regional medical consultants, a small staff of public health nursing consultants and a consultant in nutrition to which various States may turn for help in the development and conduct of their work.

SERVICES FOR CRIPPLED CHILDREN

There was also appropriated the sum of \$2,850,000 for the purpose of extending and improving, especially in rural areas and in areas suffering from severe economic distress, services for locating crippled children and providing them with the necessary services and care. This work may be undertaken on plans which have been

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approved by the chief of the Children's Bureau.

During the five months, Feb. 1 to June 30, 1936, plans of 38 States and Territories were approved and the total payments were \$732,492.33. During the first six months of the fiscal year of 1937, ended Dec. 31, 1936, plans of 42 States and Territories have been approved and the payment of \$820,968.59 has been authorized. A state plan for service to crippled children must provide for financial participation by the State and for the administration of the plan or the supervision of the administration of the plan by a state agency.

Of 45 States which have designated a state agency, 18 have assigned the work to the department of public health, 14 to the department of public welfare, five to the department of education, seven have utilized crippled children commissions, and one (Missouri) makes the hospital of the State University the administrative agency.

In some States the number of crippled children has been determined. In most States plans are included in their programs for locating crippled children wherever they are.

Diagnostic clinics are being set up, hospital facilities are being expanded, and after-care in supervision and physical training is being provided in order that there may come about a good vocational and social adjustment in every case where the crippled child's capacity permits.

CHILD WELFARE SERVICES

The Social Security Act also authorized the appropriation of the sum of \$1,500,000 "for the purpose of enabling the United States through the Children's Bureau to cooperate with state public welfare agencies in establishing, extending and strengthening, in predominately rural areas, public welfare services for the protection and care of homeless, dependent and neglected children and children in danger of becoming delinquent." This amount is allocated by the Secretary of Labor to the various States, \$10,000 to each State

and the remainder apportioned to the rural population of each State with regard to the total rural population of the United States.

Here too, the child in the rural areas comes in for special benefit. The Federal appropriation is limited to services in seeking him out and making suitable provision for him, but the expense and method of his care is left to public and private agencies in the various States.

During the five months of the fiscal year, 1936 (Feb. 1 to June 30), 34 States presented plans that were approved and \$227,954.12 was paid to those States. During the first six months of the fiscal year, 1937 (July 1 to Dec. 31, 1936) the plans of 42 States have been approved and payments amounting to \$401,078.83 have been made to them.

The plans for child welfare services vary in detail from State to State. In general they may be said to consist in stimulating or undertaking services to children in need of care in areas where no systematic works exist in their behalf and where an interested group of citizens can be found to provide the necessary backing and support. Demonstrations of approved methods have been set up in certain counties or other local units in most of the States with the expectation that the citizens of those areas will be ready to assume complete responsibility for the continuance of the work at an early date in order that new areas may have a similar service in later years.

WORKS

PROGRESS ADMINISTRATION

The total of relief expenditures for the Federal Emergency Relief Administration (FERA) in 1935 was \$1,826,806,008, an increase of \$350,239,067 over 1934. During 1935 the Federal share rose to 74.2%. While Rhode Island drew only 35% of its relief funds from Federal sources, North Carolina at the other end of the list drew 99.7%. The average number of relief cases in 1935 was 4,681,828, and the all-time peak was touched in March, 1935 with 5,492,921.

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On Dec. 1, 1935, FERA came to an end. Relief recipients were classified as being employable or unemployable. The unemployable were referred for relief to the various state and local units. The Federal Government assumed the responsibility for finding work for the employables to the number of 3,500,000 persons. In the last week of January, 1936, the number of persons on employment lists of the Works Progress Administration (WPA) which succeeded the FERA was 2,926,650, and the peak employment of the year on account of WPA was 3,038,973. As employment in the industries and elsewhere rose the employment on WPA projects gradually decreased until in the last week of December, 1936, 2,187,944 persons were still being aided through WPA work relief. The employment figures show that the decreases were general throughout the States although in a few States decreases were not large.

The WPA is clearly the largest program in relief that has ever been attempted. The Administration has shown imagination and resourcefulness in adapting relief measures to the capacities and talents of teachers, writers, musicians, artists, dramatists and others not usually provided for through work relief measures. Nonetheless the range of service, the continental spread of the task, have caused delays, unevenness and waste.

The process of turning relief back to the States and localities has not come about without protests both from social workers and from recipients. In general the States have taken up their burdens in a cheerful and satisfactory measure.

The relief of sufferers from the drought in the Northwest and South during most of the year had the effect of swelling WPA numbers to a large extent and made it, together with the Resettlement Administration, a disaster relief agency of large proportions. It is estimated that until the spring planting season of 1937 arrives the monthly cost of government relief needed by drought-stricken farmers is about \$20,000,000. The beneficiaries number more than

500,000 families. In May, 1936, WPA expenditures for all purposes totaled \$173,700,000, which was a decrease from the month before.

For the purpose of meeting the varying wage rates in the United States, the States were divided originally into four regions. The lowest level of wage rates on WPA projects in which the pay was \$19 per month has been raised to \$21 by the transfer of the seven southern States in which this rate obtained into Region III where \$21 per month is the prevailing rate. About 24% of the persons employed on regular WPA projects were, in March, 1936, assigned to jobs paid at a higher than unskilled rate and which required some occupational training. Skilled and semi-skilled workers on construction projects numbered about 8%, office workers, chiefly clerks and stenographers, 5%, professional and technical workers such as teachers, musicians, engineers, 4%. An analysis of the WPA roles in 1936 showed 16% of all those employed were women. In the same month WPA's educational program employed 40,585 teachers, 6,602 of them being employed in teaching 266,630 people to read and write.

While at the beginning of the WPA program the recipients of work relief were limited to those who were on relief during the six months previous the Emergency Relief Appropriation to Nov. 1, 1935, by the passing of Act of 1936, this requirement was eliminated. To be a recipient of relief is no longer a prerequisite since the 74th Congress prescribed that persons "in actual need of relief were to have the same eligibility as those from relief roles." By an administrative order the minimum age for employment, previously fixed at 16 years, was raised to 18 years on all but student-aid projects of the National Youth Administration, and except for youths already working on projects as of July 1, 1936. It was also ordered that persons on probation and parole, hitherto ineligible, may now be assigned to WPA jobs.

A study of former urban relief cases in 13 representative cities from

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Oct. 1, 1935 to Aug. 1, 1936, found a steady increase in the number of such cases supported entirely by private industry. The rate of increase was faster from March to the end of July, 1936, when the high point of 25.6% of former urban relief cases then self supporting was reached. The earlier period October, 1935 to March, 1936 started from the low of 13.7%. The number of clients who had obtained partial self support also rose with the progress of the year.

The report of studies to seek the reason why relief cases fail to accept WPA employment, covering 13 representative cities, showed that an average of 25% of the total assignments did not result in placement. Failures ranged from 15% in three cities, to 48% in a single city, but a careful analysis showed that the number refusing to work without justifiable reason did not exceed 1%. In eight cities there was not a single instance of unjustifiable refusal. Most of the failures to accept referral to work were traced to inaccurate records of work qualifications and home addresses. Some 27% of refusal was due to physical disability. The same story was found in Cincinnati where only three out of 546 refused to work, and in Toledo where seven out of 420 refused to work. Here, too, inaccurate records were responsible for many of the apparent failures to accept work.

In an effort to discover the cost of administering relief, the Boston Department of Public Welfare collected figures from relief organizations in nine different cities. It found that against the Boston ratio of 7.8% for administrative costs to total costs, the figures for other cities were as follows: Baltimore, 11.9%; Chicago, 8.7%; Cleveland, 9.4%; District of Columbia, 15.5%; Hartford, 11.4%; New Haven, 11.2%; New York, 16.4%; Philadelphia, 7.4%; St. Louis, 10.1%.

In the State of New York in September, 1936, 266,369 cases were aided with direct relief alone; 662 received work relief and 210 received both direct relief and work relief. In addition 15,166 persons received home

relief in supplementation of WPA work relief. This made a total of 282,407 cases aided in that month. Of this total 73% were in New York City, involving 584,147 individuals. The total expenditure for the relief project for the State of New York in September, 1936, alone was \$11,367,908, of which \$8,900,399 was expended in New York City. Of the total expenditures in the State of New York, \$6,363,192 came from local funds; \$4,961,385 from state funds; and \$43,331 from Federal funds. These sums included no money expended by WPA or PWA Federal funds.

PRIVATE RELIEF AGENCIES

The administration of relief has been transferred almost entirely to public agencies. The Social Security Board through its Bureau of Research and Statistics reports that in September, 976 agencies in 118 urban areas expended a total of \$30,822,281, of which \$30,039,535 came from public funds and \$792,746 from private funds, 2.6%. The percentage was even lower in September, 1935, being 1.4%. Of the \$30,029,535, 69.3% was expended in direct work relief and 28.1% in special allowances for old age assistance, aid to dependent children, and aid to the blind. The private agencies in these same areas were reported to have been classed as follows: of 482 private agencies reporting, 124 non-sectarian expended \$418,194; 73 Jewish agencies, \$159,369; 57 Catholic agencies, \$84,953; 72 divisions of the Salvation Army, \$39,788; 63 other private agencies, \$51,962; Veterans' Relief from 84 units, \$28,219; and nine agencies providing work relief, \$35,008. The total expenditure in these 118 urban areas, public and private, had been reduced 60% between September, 1935 and September, 1936.

TRENDS IN MATERNAL AND INFANT MORTALITY

While in 1916, of every 1,000 live births in the registration area, established in 1915, 100 died before reaching one year of age, there has been a steady decrease in the infant

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mortality rate and in 1935 the rate stood at 59. A comparison of the urban and rural infant mortality rates in 1915 shows the rate for the rural child to be more favorable than for the urban child. In 1934, however, the tables were turned, the urban rate was 54, while the rural rate was 62. The mortality rate for white infants fell from 99 per 1,000 live births in 1915 to 53 in 1932; for colored infants it fell from 181 in 1915 to 86 during the later period. Both rates were slightly higher in 1934.

More women in the reproductive period of life, 15 to 44 years, died in 1934 in diseases of pregnancy and child birth than from any other cause except tuberculosis. The maternal death rate varies among the States. While 10 States had 65 deaths or more per 10,000 live births, 18 had rates of less than 55. The lowest rates were in the District of Columbia (38), Vermont (39), California and Wisconsin (43). In the United States there has been little reduction since 1915; in 1934 it was 59 per 10,000 live births; in 1915 it was 61.

CHILD LABOR

At the end of the year, 24 States had ratified the proposed Child Labor Amendment to the Constitution of the United States, but 12 more are needed to make the Amendment a part of the Constitution. Child labor of adolescents has been increasing noticeably during the year. The number of working papers issued to 14- and 15-year old school children was two and one half times as great in the first five months of 1936 as in the same months of 1935.

There is a marked trend toward making the child's 16th year the minimum age for full-time employment in the United States. Experience under the National Industrial Recovery Act with a 16-year minimum in the codes indicated the practicability and desirability of such a standard. It is noted that eight States have adopted the 16-year minimum under state law.

During the year New York raised

the age from 14 to 16 for employment in factories and for all work during school hours. Provisions of the law do not apply to children over 14 who have completed a four-year course in high school.

YOUTHFUL TRANSIENTS

The increase in the number of young transients, according to a report of studies made under the auspices of the WPA, is primarily due to economic need and unemployment, but other factors present are broken and discordant homes and a desire for adventure. In accordance with a resolution of the United States Senate adopted June 18, 1936 the United States Department of Labor has started upon a study of migrant laborers.

DEVELOPMENT OF FOSTER CARE

During the year there has become available the report of the decennial children's census in a volume entitled *Children Under Institutional Care and in Foster Homes* taken in 1933 by the Bureau of the Census. The number of children reported as being in foster care on Dec. 31, 1933 was 242,929 as against 213,757 ten years previously. The increase was, however, more apparent than real because 20,000 children were reported at this time from almost 400 additional organizations which had not been represented in the previous Census. Foster institutional care fell from 65.6% to 57.8%, while foster family care rose from 34.4% to 42.2% in the decade. The increase came especially in foster boarding homes in which 66,350 children were found on Dec. 31, 1933, 31,538 in foster free homes and 4,689 in either work or wage homes. While the Census report shows five States reporting not a single child in a boarding home in 1923, all the States were using boarding homes in 1933.

The aggregate increase in foster care is, however, actually a decrease compared to the increase in population. This is in contrast to the increase in the care of children in their own homes through mothers' aid and

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during the last year through aid to dependent children stimulated by the Social Security Act.

EFFECTS OF THE DEPRESSION ON CHILD CARE

The Cleveland Children's Bureau has issued a report of a study on the developments in home finding and child placing. This report predicts an unprecedented need for foster care in 1937 for the following reasons: "(1) Families, because of the depression, are not being rehabilitated as rapidly as in predepression years; (2) Older children are staying longer under care because they cannot get jobs; (3) Relatives are able to take children in fewer cases than previously, because of financial difficulties; (4) Fewer free homes are available and children already placed in free homes are frequently returned because of inadequate family income."

ADOPTION LAWS AND PRACTICES

The Children's Bureau has been making a study of adoption procedure in States that have authorized state departments of welfare to make social investigations of adoption petitions referred by the courts. States requiring or authorizing social investigation may be classified as follows: in 10 States the investigation is vested in the State Department (Alabama, California, Delaware, Massachusetts, Minnesota, New Mexico, North Dakota, Oregon, Rhode Island and Wisconsin); in 12 States the court may arrange for the investigation or make the investigation itself; in three States the investigation is authorized but not required. In 23 States there are no statutes regarding social investigations.

Information was obtained in regard to approximately 2,000 adoption petitions which represent the total number of petitions filed in the courts of the first group of States, except Delaware. In Wisconsin the state department makes investigation for children born out of wedlock who are not under the care of licensed agencies and for other children whose cases may be referred by the courts.

These 2,000 adoption petitions may be divided into two groups; those filed by relatives (40%), and those filed by other persons. The children to be adopted included both children born out of wedlock (60%) and those whose parents had been married. The majority of the children of legitimate birth were to be adopted by relatives. It is of interest, however, that nearly 30% of the children born out of wedlock were also to be adopted by relatives, a step-father petitioning in about half of these cases.

In a small percentage of the reports of the investigating agency the desirability of the proposed adoption was not given, but more than 90% of the adoptions were approved. Although in only three fourths of the cases was the adoption considered desirable or satisfactory, approval was given in many instances even when conditions were unsatisfactory because of the ties of affection which had been established between child and foster parents. It is noteworthy that the State, in which there was the largest number of disapprovals or questions as to the desirability of adoptions, had a comparatively small number of placements by social agencies.

As the result of the study evidence was found that, when investigations were made by skillful persons, many undesirable or unnecessary adoptions were prevented and no further action was taken by the prospective parents. A number of judges who have final authority in cases of adoption were visited in each State. It was found that 16 judges gave unqualified approval to the requirement and 40 expressed general satisfaction with it. Only two could see no advantage in the investigation and were definitely opposed to a state department participating in the matter of adoptions. Thirteen States required a six-month period of residence for the child before adoption. In six States an interlocutory decree is given by the court which must be in effect for a year before final action is taken by the court. In one State it is two years.

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DELINQUENT CHILDREN

There has been a rapid development of coordinating councils in various parts of the country during the past year. The first one was organized in Berkeley, California, in 1919, but the great impetus came following the creation of the highly organized councils of Los Angeles County in 1932.

Their purpose is to prevent delinquency by providing better coordination of community resources both public and private. Through these councils there have also been secured a better supervision of commercialized amusements, the suppression of the sale of indecent literature and an increase in recreational resources. These councils have been particularly useful where there has been a vigorous and intelligent personality as leader.

An experiment in developing methods of community organization for the early treatment of juvenile delinquency has been started by the United States Children's Bureau in St. Paul, Minnesota over a three-year period, to be undertaken in cooperation with the local juvenile court and other local agencies. Emphasis will be placed on the organization of community resources for the treatment of the individual early delinquent or pre-delinquent in certain areas of the city.

New Jersey by act of its legislature, March, 1936, created a State Juvenile Delinquency Commission whose purpose is to carry on certain

studies in juvenile delinquency under a two-year appropriation of \$50,000.

AMERICAN ASSOCIATION OF SOCIAL WORKERS

The development of the American Association of Social Workers continues. There is an increasing demand for trained service in both public and private positions. Membership in the Association is a prerequisite for appointment in a good many places. There are at the present time in the Association 72 chapters with an individual membership of 10,062. There are also five councils in the States of California, Michigan, New York, Ohio and Pennsylvania which include members and non-members living in those States.

JOINT FINANCING FOR PRIVATE AGENCIES

As in previous years a Washington conference for the mobilization of human needs was held in September in preparation for financial campaigns in the various cities, most of which are undertaken in the fall months. On Sept. 1, 1936, there were 419 community chests in the United States and Canada. These chests reported having raised the sum of \$76,127,011 during 1936, as compared with the report of 417 chests having raised \$69,102,238 in 1935. This shows an increase for 1936 of \$7,024,773. The reported returns of the fall campaigns of 275 chests indicate that there will be about a 4% increase over last year.

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HOUSING

By STEWART McDONALD

ADMINISTRATOR, FEDERAL HOUSING ADMINISTRATION

GENERAL PROGRESS

On Jan. 1, 1937, the National Housing Act, under which the Federal Housing Administration was created, had been upon the statute books for two and one-half years, the measure having been approved by the President on June 27, 1934. Because of the necessity of setting up an administrative organization from its foundations and the need of procuring enabling legislation in the several States which would permit their local lending institutions to participate fully in the benefits and advantages of the act, it was not until the spring of 1935 that the Federal Housing Administration began to record noteworthy accomplishments (44 out of the 48 States enacted such legislation). On April 1, 1935, it had insured modernization and repair notes to the value of \$11,300,416, and home mortgages to the value of \$7,926,354 had been accepted for insurance.

On Jan. 1, 1937 the total of business on the books of the Federal Housing Administration amounted to \$1,350,157,149. This included mortgages selected for appraisal, commitments to insure large scale housing projects and insured modernization and repair notes. Of this sum approximately \$810,000,000 represented business transacted in 1936. Home mortgages accepted for insurance had reached on Jan. 1, 1937, an aggregate of 151,758 in number and \$609,044,017 in amount. Of this \$438,449,153 in value were accepted for insurance during 1936, representing a gain of 157 per cent over 1935. Approved large scale housing project mortgages amounted to \$41,141,000.

On the same date modernization and repair notes numbered 1,326,102, insured for \$500,220,642. Of these the amount insured during 1936, was \$246,140,913, a gain of 10 per cent over 1935.

BETTER HOUSING COMMITTEES

Shortly after its inception the Federal Housing Administration began participation in the organization of more than 8,000 Better Housing Committees in as many communities throughout the United States. After a careful survey, it has been estimated that the activities of these Better Housing Committees resulted in the spending of more than \$2,000,000,000 for home modernization and repair work which does not show on the records of the Federal Housing Administration because it was financed without the Administration's insurance. Expressed in another way it may be said that the program of the Federal Housing Administration has created the equivalent of one year's employment for 2,000,000 workers.

ADMINISTRATIVE AND OPERATIVE COSTS

In these accomplishments the Federal Housing Administration has expended since its organization \$23,236,513.48 in administrative and operative costs. This amount does not include insurance claims paid to lending institutions on defaulted modernization and repair notes, which are paid from a separate insurance fund established by the National Housing Act. Up to Jan. 1, 1937, such insurance claims, less collections, totalled \$5,364,022, which is approximately one per cent upon the \$500,000,000 of notes insured. The sum of \$200,000,000 was made available by Congress for the payment of losses on modernization and repair notes. One half of this amount has already been relinquished by the Federal Housing Administration. As originally enacted the modernization and repair section of the measure expired by limitation on Dec. 31, 1935, but Congress has twice extended it until, as at present fixed, the provision expires on April 1, 1937. Actuarial

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estimates figure that eventually \$75,-000,000 of the remaining \$100,000,000 additional will be turned back to the Treasury on this account.

MORTGAGE FORECLOSURES

Of the 151,758 mortgages accepted for insurance from the inception of the Federal Housing Administration, up to and including Dec. 31, 1936, only 12 have been foreclosed, resulting in the conveying of the properties represented to the Administrator. The value of these foreclosed mortgages aggregated \$50,331.65 for which debentures bearing three per cent interest were issued to the lending institutions. One of these properties has been sold for an amount sufficient to pay the lending institution the full amount of the loan plus costs of foreclosure and leave a surplus of \$169, which was returned to the mortgagor. The remaining properties representing mortgage claims of \$47,-389.88 are being held by the Administrator for similar advantageous sales.

CONSTRUCTION

During 1934, the year in which the Federal Housing Administration was organized, building permits were issued in 257 cities in the entire United States for only 30,000 new homes, approximately one-twentieth of the normal demand. The consequent stagnation in the construction industry was such as to result in a large group of unemployed workers. Last year there were erected around 270,000 non-farm dwelling units, and carefully prepared estimates for the coming year indicate the building of 400,000 to 450,000 of such homes, an increase of substantially 50 per cent, which is still short of the required number.

OPERATION OF THE FEDERAL HOUSING ADMINISTRATION

In its activities the Federal Housing Administration lends no money; it has never had any funds for such purpose. Instead, it insures private lending institutions against loss on loans made for modernization and repair purposes; it also insures mortgages for the construction of homes,

for refinancing loans upon structures already in existence, or for financing large scale housing projects. It functions chiefly under two provisions of the National Housing Act, namely, Title I which provides for the Modernization Credit Plan, the emergency phase of the program, and Title II, which provides for the Insured Mortgage System, the permanent phase.

Under Title I a home owner or a long term lessor who has a regular income and who enjoys a good reputation in his community for the discharge of his financial obligations, may apply to a bank or other lending institution for a loan with which to make improvements upon his property. In compliance with certain conditions and in conformity with certain regulations, the lending agency is insured against loss on such a loan by the Federal Housing Administration. Prior to the formation of the Federal Housing Administration only about 150 commercial banks made loans for such purposes. The plan of the Federal Housing Administration thus enabled thousands of banks and other institutions to put out their idle funds safely and profitably, and also had the effect of stimulating the construction industry and the re-employment of many thousands of workers.

Such loans are amortized by equal monthly payments over a period which may not exceed five years; generally a period of three years has been found sufficient. Originally, the act limited these loans to \$2,000, but later it was amended so as to provide for loans up to \$50,000 upon commercial and industrial structures and their equipment, colleges, schools, hospitals, apartment houses and churches. Usually some form of additional security has been required in the case of loans for amounts larger than \$2,000, but the same plan of amortization has been maintained for both types.

INSURED MORTGAGE SYSTEM

Under Title II the Insured Mortgage System has been set up. This contemplates the insurance of mortgage loans by private institutions

XV. SOCIAL PROBLEMS AND CONDITIONS

upon dwellings of from one- to four-family units, and upon large-scale housing projects. An applicant may apply to a lending agency for a mortgage loan for home construction or for re-financing an existing mortgage. If the loan is approved by the Federal Housing Administration after its examination, the mortgage is accepted for insurance by the Administration. In the case of a loan for new construction the Federal Housing Administration provides three inspections during the progress of the work. These inspections assure the adequacy of the foundation and the conformity of the materials and supplies used to prescribed specifications as well as the quality of the workmanship. In the case of new construction and also of re-financing an old loan there is also provided a system of appraisal which takes into consideration the neighborhood in which the property is located, the trend of the neighborhood to determine whether or not it will continue, at least for the life of the mortgage, as a desirable residence section, the nature and the availability of public utilities, its proximity to places of employment and trading centers, the civic benefits and advantages this location affords, and all other factors which might affect the utilization and re-sale of the property.

When these requirements are met, the Federal Housing Administration may insure a mortgage up to 80 per cent of the appraised value of the property, provided the loan is not in excess of \$16,000. By reason of the inspections made and the appraisal placed upon the property by the Federal Housing Administration's experts, the home owner is assured that he has made a safe investment in the property and the lender is guaranteed against loss of the money he has advanced.

Such a mortgage may be extended for a period as long as 20 years under certain conditions and is amortized by equal monthly payments during that time. These payments are fixed so as to form a proper ratio to the income of the borrower, and in most cases they approximate the amount

he would otherwise pay for the rental of a similar piece of property. Often they are less than the normal rental. They include not only part payment upon the principal borrowed, but also interest, mortgage insurance, fire and hazard insurance, and the service charge of the lending institution.

The Insured Mortgage System provides that a home owner may carry the financial obligation upon his dwelling in a single mortgage. A loan up to 80 per cent of the value of the home requires the owner to have at least a 20 per cent equity in his property. Thus he is absolved from the necessity of obtaining a second and perhaps a third mortgage. Such junior liens are highly expensive with their commissions, fees and other exactions when renewals are necessary. Under the Insured Mortgage System, there are no renewals and when the final monthly payment is made, the property is free and clear of all obligations.

In the event of default in payments by the borrower, necessitating foreclosure and the conveyance of the property to the Administrator, the Federal Housing Administration is empowered to issue to the lending institution 3 per cent debentures covering the sum still due under the mortgage. Such debentures issued before July 1, 1937 are guaranteed by the government. Extension of the term of this guarantee is expected to be considered in the first session of the Congress in 1937.

The Federal Housing Administration's Mutual Mortgage Insurance fund in the Treasury now amounts to more than \$15,000,000. This fund is available for possible net losses under the insured mortgage system. Of this amount the sum of \$10,000,000 was provided by the Congress in the act as an original revolving fund and the remainder has been accumulated from premium payments, valuation fees and other earnings. It is estimated that at the close of the current fiscal year the fund will have reached about \$20,000,000. The present business of the Federal Housing Administration amounts to approximately \$2,000,000 for every

working day in the month. Its earnings from insurance fees are in excess of \$500,000 a month.

LOW COST HOUSING

Low cost housing forms another important activity of the Federal Housing Administration. The Administrator is empowered to insure mortgages on large scale housing projects, provided the insurance for any one project does not exceed \$10,000,000. Large-scale housing projects are multiple family dwellings for persons of comparatively low incomes. They are promoted, developed, financed and managed by private capital and private enterprise, the Federal Housing Administration insuring the mortgage, regulating the rents, charges, capital structure, rate of return or methods of operation. It also determines whether there is need of such a project before the property is eligible for insurance, submitting it to construction method and neighborhood standard tests as in the case of individual home mortgages. Large-scale housing projects with which the Federal Housing Administration is concerned differ materially from housing projects of other government agencies. They are not financed by government funds, nor are they primarily substitutes for slums.

NATIONAL MORTGAGE ASSOCIATIONS

Title III of the Housing Act provides for the establishment of National Mortgage Associations which shall be authorized, subject to rules and regulations prescribed by the Administrator, to purchase and sell first mortgages and to borrow money for such purposes through the issuance of notes, bonds, debentures and other

such obligations. The act stipulates that such associations shall have a capital stock of a par value of not less than \$2,000,000 and that they shall not have outstanding at any time notes, bonds and debentures in excess of 12 times the aggregate par value of mortgages held by each and insured under the provisions of Title II, plus the amount of cash on hand and on deposit and the amount of investments in bonds or other obligations of, or guaranteed by the United States. Up to the present time no such associations have been formed. The purpose of such associations being to purchase insured mortgages from original mortgagees, such a function has not yet been found necessary, in as much as in most cases where mortgagees have desired to relieve their portfolios of such instruments, life insurance companies and large metropolitan banks have purchased them and left the original mortgagee only the duty of servicing the mortgage. The need for their establishment remains for the future to determine.

INSURANCE OF SAVINGS AND LOAN ACCOUNTS

Title IV, providing for insurance of savings and loan accounts, is administered by the Federal Savings and Loan Insurance Corporation under the direction of a board of trustees whose members are members of the Federal Home Loan Board.

AMENDMENTS

Title V is miscellaneous, consisting chiefly of amendments to the Federal Home Loan Bank Act, the Farm Credit Act of 1933, the Home Owners Loan Act of 1933 and the Interstate Commerce Act.

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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

JUSTICE AND MAINTENANCE OF ORDER

- AMERICAN BAR ASSN., Section on Criminal Law, Endicott Bldg., St. Paul, Minn.
- AMERICAN CIVIL LIBERTIES UNION, 31 Union Sq., New York City.
- AMERICAN COUNCIL OF LEARNED SOCIETIES, 597 Fifth Ave., New York City.
- AMERICAN INSTITUTE OF CRIMINAL LAW AND CRIMINOLOGY, 357 E. Chicago Ave., Chicago, Ill.
- AMERICAN LAW INSTITUTE, 3400 Chestnut Street, Philadelphia, Pa.
- AMERICAN PRISON ASSN. OF N. Y., 135 E. 15th St., New York City.
- NATIONAL COMMITTEE ON PRISONS AND PRISON LABOR, 250 W. 57th Street, New York City.
- NATIONAL CRIME COMMISSION, 73 Tremont St., Boston, Mass.
- NATIONAL POLICE CONFERENCE, 240 Centre St., New York City.
- NATIONAL PROBATION ASSN., INC., 50 West 50th St., New York City.
- NATIONAL SOCIETY OF PENAL INFORMATION, 114 E. 30th St., New York City.
- SOCIETY FOR THE PREVENTION OF CRIME, 270 Broadway, New York City.
- WOMEN'S PRISON ASSN., 110 Second Ave., New York City.

SOCIAL ORGANIZATIONS

- AMERICAN NATIONAL RED CROSS, 17th between D and E Sts., Washington, D. C.
- AMERICAN POLITICAL SCIENCE ASSOCIATION, 205 Bennett Hall, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SEAMEN'S FRIEND SOCIETY, 72 Wall Street, New York City.
- AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS, 50 Madison Ave., New York City.
- BOY'S CLUBS OF AMERICA, INC., 381 Fourth Ave., New York City.
- BOY SCOUTS OF AMERICA, 2 Park Ave., New York City.

CHILDREN'S AID SOCIETY, 105 E. 22nd St., New York City.

CIVIC FORUM, 123 W. 43rd St., New York City.

FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA—Commission on the Church and Social Service, 105 E. 22nd St., New York City.

GIRLS' FRIENDLY SOCIETY OF THE U. S. A., 386 Fourth Avenue, New York City.

GIRLS' SERVICE LEAGUE OF AMERICA, 138 E. 19th St., New York City.

HUMANE SOCIETY OF NEW YORK, 313 East 58th St., New York City.

NATIONAL CATHOLIC WELFARE CONFERENCE, 1312 Massachusetts Ave., N. W., Washington, D. C.

NATIONAL SOCIAL WORK COUNCIL, 50 West 50th St., New York City.

YOUNG MEN'S CHRISTIAN ASSN., International Committee, 347 Madison Ave., New York City.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION, 600 Lexington Ave., New York City.

SOCIAL FRATERNITIES

BENEVOLENT AND PROTECTIVE ORDER OF ELKS OF THE U. S. A., 2750 Lake View Ave., Chicago, Ill.

INTERNATIONAL ASSN. OF LIONS CLUBS, 350 McCormick Building, Chicago, Ill.

KIWANIS INTERNATIONAL, 520 N. Michigan Ave., Chicago, Ill.

KNIGHTS OF COLUMBUS, 45 Wall St., New Haven, Conn.

KNIGHTS OF THE KU KLUX KLAN, INC., P. O. Box 1204, Atlanta, Georgia.

KNIGHTS OF PYTHIAS, 1054 Security Building, Minneapolis, Minn.

LOYAL ORDER OF MOOSE, Mooseheart, Ill. (Supreme Lodge of the World).

MODERN WOODMEN OF AMERICA, 1504 Third Ave., Rock Island, Ill.

ROTARY INTERNATIONAL, 35 East Wacker Drive, Chicago, Ill.

SOVEREIGN GRAND LODGE OF THE INDEPENDENT ORDER OF ODD FELLOWS, 16 West Chase St., Baltimore, Md.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

SUPREME COUNCIL OF THE ROYAL ARCANUM, 407 Shawmut Ave., Boston, Mass.

SUPREME COUNCIL, 33° ANCIENT & ACCEPTED SCOTTISH RITE.—Northern Jurisdiction, 1117 Statler Building, Boston, Mass.—Southern Jurisdiction, 1733 16th St., N. W. Washington, D. C.

WOODMEN OF THE WORLD, Sovereign Camp, 17th and Farman Sts., Omaha, Nebraska.

(SOCIAL) HOME LIFE

LANDLORDS' COOPERATIVE ASSN., 18 E. 41st St., New York City.

NATIONAL HOUSING ASSN., 105 E. 22nd St., New York City.

NATIONAL PLANT, FLOWER & FRUIT GUILD, 1192 Sixth Ave., New York City.

NEW YORK ASSN. FOR IMPROVING THE CONDITIONS OF THE POOR, 105 E. 22nd St., New York City.

(SOCIAL) CHILDREN

BIG BROTHER AND BIG SISTER FEDERATION, INC., 425 Fourth Ave., New York City.

BIG BROTHER MOVEMENT, INC., 315 Fourth Ave., New York City.

CAMP FIRE GIRLS, INC., 41 Union Square, New York City.

CHILD CONSERVATION LEAGUE OF AMERICA, 318 W. Washington St., Chicago, Ill.

CHILD WELFARE LEAGUE OF AMERICA, 130 E. 22nd St., New York City.

CHILDREN'S AID SOCIETY, 105 E. 22nd St., New York City.

HEBREW SHELTERING AND IMMIGRANT AID SOCIETY, 425 Lafayette St., New York City.

NATIONAL CHILD LABOR COMMITTEE, 419 Fourth Ave., New York City.

NATIONAL CHILD WELFARE ASSN., 70 Fifth Ave., New York City.

(SOCIAL) HEALTH

AMERICAN ASSN. OF SOCIAL WORKERS, 130 E. 22nd St., New York City.

AMERICAN BIRTH CONTROL LEAGUE, 515 Madison Ave., New York City.

AMERICAN CHILD HEALTH ASSN., 50 West 50th St., New York City.

AMERICAN FOUNDATION FOR THE BLIND, INC., 15 West 16th Street, New York City.

AMERICAN HUMANE ASSN., 50 Madison Ave., New York City.

AMERICAN MISSION TO LEPERS, 156 Fifth Ave., New York City.

AMERICAN SOCIAL HYGIENE ASSN., INC., 50 West 50th St., New York City.

ANTI-PROFANITY LEAGUE, Ware, Mass.

BETTER FILMS, NATIONAL COUNCIL, 70 Fifth Ave., New York City.

CHARITY ORGANIZATION SOCIETY OF THE CITY OF NEW YORK, 105 E. 22nd St., New York City.

CHICAGO CRIME COMMISSION, 300 W. Adams St., Chicago, Ill.

CREMATION ASSN. CO. OF N. Y., 181 W. 238th St., New York City.

EUGENICS RESEARCH ASSN., Cold Spring Harbor, L. I., N. Y.

NATIONAL COMMITTEE FOR MENTAL HYGIENE, 50 West 50th St., New York City.

NATIONAL HEALTH COUNCIL, 50 West 50th St., New York City.

NATIONAL HOUSING ASSN., 105 E. 22nd St., New York City.

NATIONAL RECREATION ASSN., 315 Fourth Avenue, New York City.

NATIONAL SAVE-A-LIFE LEAGUE, INC., 299 Madison Ave., New York City.

NEW YORK SOCIETY FOR THE SUPPRESSION OF VICE, 215 W. 22nd St., New York City.

NON-SMOKERS' PROTECTION LEAGUE OF AMERICA, 101 W. 72nd St., New York City.

TRAVELERS' AID SOCIETY OF N. Y., 144 E. 44th St., New York City.

(SOCIAL) TEMPERANCE

ANTI-SALOON LEAGUE OF AMERICA, 150 Fifth Ave., New York City.

NATIONAL TEMPERANCE SOCIETY, 289 Fourth Ave., New York City.

WORLD NARCOTIC DEFENSE ASSN., 578 Madison Ave., New York City.

FOUNDATIONS

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, 405 West 117th St., New York City.

CARNEGIE FOUNDATION, 522 Fifth Ave., New York City.

CARNEGIE HERO FUND COMMISSION, 2307 Oliver Building, Pittsburgh, Pa.

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CARNEGIE INSTITUTION OF WASHINGTON, 16th and P Sts., N. W., Washington, D. C.

GENERAL EDUCATION BOARD, 49 W. 49th Street, New York City.

GUGGENHEIM FOUNDATION, 551 Fifth Ave., New York City.

HALL OF FAME FOR GREAT AMERICANS, New York University, University Heights, New York City.

MORO EDUCATIONAL FOUNDATION, 475 Fifth Ave., New York City.

ROCKEFELLER FOUNDATION, 49 W. 49th Street, New York City.

ROCKEFELLER INSTITUTE, York Ave. and 66th St., New York City.

ROOSEVELT MEMORIAL ASSN., 28 E. 20th St., New York City.

RUSSELL SAGE FOUNDATION, 130 E. 22nd St., New York City.

WOODROW WILSON FOUNDATION, 8 West 40th St., New York City.

WOMEN'S WORK AND PROGRESS

AMERICAN ASSN. OF UNIVERSITY WOMEN, 1634 I St., N. W., Washington, D. C.

AMERICAN NURSES' ASSN., 50 West 50th St., New York City.

AMERICAN WOMEN'S ASSN., INC., 353 W. 57th Street, New York City.

GENERAL FEDERATION OF WOMEN'S CLUBS, 1734 N St., N. W., Washington, D. C.

GIRLS SERVICE LEAGUE OF AMERICA, 138 East 19th St., New York City.

NATIONAL AMERICAN WOMAN SUFFRAGE ASSN., Grand Central Terminal, New York City.

NATIONAL ASSOCIATION OF WOMEN PAINTERS AND SCULPTORS, 42 W. 57th St., New York City.

NATIONAL COUNCIL OF WOMEN, U. S. A., 4 Park Ave., New York City.

NATIONAL LEAGUE OF WOMEN VOTERS, 726 Jackson Place, N. W., Washington, D. C.

NATIONAL WOMAN'S CHRISTIAN TEMPERANCE UNION, 1730 Chicago Ave., Evanston, Ill.

NATIONAL WOMAN'S PARTY, 144 B St., N. E., Washington, D. C.

PROFESSIONAL WOMEN'S LEAGUE, Broadway and 73d Street, New York City.

QUOTA CLUB INTERNATIONAL, INC., 1204 - 18th St. N. W., Washington, D. C.

SOUTHERN WOMEN'S EDUCATIONAL ALLIANCE, 401 Grace-American Building, Richmond, Va.

WOMEN'S EDUCATIONAL AND INDUSTRIAL UNION, 264 Boylston St., Boston, Mass.

WOMEN'S ROOSEVELT MEMORIAL ASSN., Roosevelt House, 28 E. 20th St., New York City.

WOMEN'S TRADE UNION LEAGUE, 247 Lexington Ave., New York City.

DIVISION XVI

LABOR AND LABOR LEGISLATION

LABOR CONDITIONS

BY ISADOR LUBIN

COMMISSIONER OF LABOR STATISTICS, DEPARTMENT OF LABOR

GENERAL

Continued recovery, manifested in increased employment and earnings, and the organization of Federal and state machinery to set the social security program in motion, stand out prominently in a glance over general labor conditions in 1936. Total employment in non-agricultural industries, exclusive of Federal emergency employment, was 31,680,000 in September, 1936, according to an estimate made by the Secretary of Labor. This was an increase of 1,400,000 jobs in 12 months, and was 6,000,000 higher than the low level of employment reached in March, 1933. Employment continued to mount and, between the middle of September and the middle of October, an additional 223,000 workers returned to employment in manufacturing and non-manufacturing industries. By the middle of November, the latest period for which figures are available, a further expansion of approximately 58,000 had occurred.

Restorations of wage cuts that had been made during the depression were frequent during the year. Wage increases were secured through agreement in a number of instances, and the granting of bonuses became a widespread practice at the end of the year.

The labor movement continued active and made definite progress in several fields, in spite of internal dissension growing out of the activities of the Committee for Industrial Or-

ganization, which was formed late in 1935 by certain of the international unions affiliated with the American Federation of Labor. Among noteworthy events of the year in the labor movement were the intensive organizing campaign in the steel industry which opened early in the year, and the strikes in the automobile and allied industries which occurred at its close.

EMPLOYMENT

The index of employment in all manufacturing industries combined, on a 1923-25 base, was 96.7 in November, while that for the non-durable goods group was 103.2. Among the heavy industries in which employment in November, 1936 was materially greater than the average for the 3-year period 1923-25, were blast furnaces, steel works and rolling mills, machine tools, and automobiles. The textile industries showed pronounced gains, the index of employment in the entire group being higher than the 3-year base period, while in women's clothing and men's furnishings the indexes were 158.5 and 142.8 respectively.

Further evidence of extensive re-employment is afforded by the statement of the United States Employment Service that, while November is normally a month of seasonally declining activities in the private placement field, the number of workers placed in private employment in November, 1936, was more than twice

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the number placed in any previous November since the service was organized in 1933. During the fiscal year ended June 30, 1936, the United States Employment Service made 1,147,287 placements in private employment and 1,743,804 in public and governmental employment. Corresponding figures for the preceding fiscal year were 1,089,969 and 1,681,768.

The Works Progress Administration employed between 2,500,000 and 3,000,000 workers monthly during the year, and the number of employees in the Emergency Conservation program dropped from 478,751 in January to 320,821 in September as job opportunities increased.

WAGES AND HOURS OF LABOR

Pay roll data compiled by the Bureau of Labor Statistics showed an increase of nearly \$50,500,000 in weekly wage disbursements in November, 1936 as compared to November, 1935, and average weekly earnings of \$23.89 in November, 1936 were 10 per cent higher than those of the preceding year. On the other hand, average hourly earnings, as computed by the Bureau, showed slight variation throughout the year.

Union wage scales in the building trades advanced substantially between 1935 and 1936 from an index of 88.4 on a 1929 base in 1935 to an index of 91.6 in 1936. In most of the trades a greater proportion of helpers and laborers than of journeymen benefited by increased wage rates.

Farm wage rates also were considerably higher in 1936 than in 1935. The average daily rate in the country as a whole for farm laborers, exclusive of board, was \$1.47 in October, 1935 and \$1.59 in October, 1936. The monthly rate, without board, was \$30.38 in October, 1935 and \$32.84 a year later.

Generally speaking, average weekly hours increased after the N. R. A. codes were discontinued. A special study of Bureau data covering 16 important manufacturing industries showed that average weekly hours increased materially between May, 1935 when the National Industrial

Recovery Act was declared unconstitutional and May, 1936. The tendency to lengthen the working day was more pronounced in small establishments than in large, irrespective of industry. Thus, in 3,526 small plants (employing fewer than 200 workers), average weekly hours were 36.4 in May, 1935 and 41.6 in May, 1936, an increase of 14.3 per cent. In 1,160 plants employing 200 or more, the work week averaged 35.3 hours in May, 1935 and 40.1 hours in May, 1936. In November, 1936 average working hours per week were 42.8 in durable goods industries, 38.5 in non-durable goods industries, and 40.6 for all manufactures combined.

The working hours of two large groups of workers were shortened by legislative enactment. Licensed officers, coal passers and sailors on American ships were granted an eight-hour day at sea, and the former nine-hour day observed in safe harbor was reduced to eight hours. Postal employees actually engaged in working mail were enjoying a five-day, 40-hour week during 1936 in consequence of a new policy adopted in October, 1935.

WOMEN'S CLOTHING INDUSTRY

One of the most significant developments of the year in the field of industrial relations was the agreement in the women's clothing industry of New York City. Its main objectives were to reorganize and stabilize the industry in such manner as to eliminate the irresponsible element and to establish definite relations between the manufacturers and the contractors and between the jobbers and the contractors. The jobber is made responsible for working conditions in the contract shops, and administration and enforcement are put in the hands of an administrator for the dress industry and of an impartial chairman for the cloak and suit industry. One clause in the agreement covering dress manufacture, designed to control the "run-away shop" problem, declares that

LABOR CONDITIONS

shops may not be moved beyond the 5-cent fare zone of public carriers. A court decision has already been rendered under this clause which allowed damages against a manufacturer, party to the agreement, who moved out of the specified limits.

STRIKES

Strikes during the year that have resulted in union agreements include two in which the editorial and reporting staffs of newspapers were involved, thus extending unionism and union agreements still further in that field.

The outstanding industrial disputes of 1936 were the 5-week strike of the Goodyear Tire and Rubber Company of Akron, O., settled by an agreement that provided, among other terms, that the work week should not be increased above a 36-hour maximum except by vote of the workers; the RCA-Victor strike at Camden, New Jersey, in which a newly organized, independent industrial union won recognition and an agreement; the strike of the building service employees in a group of New York apartment houses, settled by arbitration, and the maritime strikes. The strike of the maritime workers of the Pacific Coast, involving the same issues of hiring and personnel policies as those which caused the 1934 strike, was entering its third month when the year ended, and its repercussions were still being felt on the Atlantic and Gulf coasts. Another important strike pending at the end of the year was that of the flat glass workers in plants making automobile glass. The year closed upon a rapidly spreading strike of the United Automobile Workers against the General Motors Corporation.

The year's record of industrial disputes is estimated at approximately 2,000, practically the same number as in 1935, with the same issues—union recognition and wages and hours—predominating. The new technique of the "sit-down strike," in which workers occupy the premises and interfere with production merely by refusing to move out, was used to

any extent in the industrial disturbances for the first time in 1936.

LABOR LEGISLATION

Federal.—Except for state enactments to implement the social security program, legislation in 1936 did not add materially to statutory regulation of working conditions. Perhaps the most important Congressional action was the passing of the Walsh-Healey Act, which gives the Secretary of Labor power to determine the labor standards and working conditions under which must be performed all contracts made by the United State Government for the manufacture of goods or the furnishing of materials involving an expenditure of more than \$10,000. Conditions stipulated in the act include an 8-hour day and a 40-hour week; prohibition of child and prison labor; and the payment of the prevailing rate of wages. Interstate transportation of strikebreakers in labor disputes was made a felony by another act of Congress. The final termination of conditions imposed upon Government employees by the old economy act was achieved when annual leave of 26 days was granted, and sick leave, although reduced from 30 to 15 days per year, was made cumulative from year to year up to a total of 90 days.

State.—Legislation in several States shortened working hours of women and children, relating chiefly to night work. Rhode Island made 16 years the minimum age for employment in factories, mechanical or manufacturing establishments, and empowered state factory inspectors to inspect for violations. No additional ratification of the child labor amendment was made in 1936.

Illinois brought occupational diseases within the scope of its workmen's compensation act, and Rhode Island liberalized its list of compensable diseases. Additional health and safety measures were enacted in Illinois, New York, Louisiana and Puerto Rico. Louisiana and South Carolina created departments of labor.

XVI. LABOR AND LABOR LEGISLATION

SUPREME COURT DECISIONS*

Guffey Coal Act.—During 1936 the Supreme Court of the United States acted upon three laws of interest to labor, declaring two unconstitutional and upholding the third. The Bituminous Coal Conservation Act (the Guffey Coal Act) was declared unconstitutional in a decision in which six Justices found that the act exceeded the legislative powers of Congress by setting labor standards and working conditions in an industry not engaged in interstate commerce. Because the labor provisions were held by five members of the Court to be inseparable from the rest of the act, the whole statute was declared unconstitutional, although four Justices, including the Chief Justice, dissented from the majority and contended that the price-fixing features of the act should be upheld.

New York Minimum Wage Act.—The second adverse decision involved the New York Minimum Wage Act, which, again by a five-to-four decision, was outlawed as being essentially the same type of legislation as that previously declared unconstitutional by the Supreme Court in passing upon the minimum wage act of the District of Columbia in 1923. The State of New York, supported by several other States with similar minimum wage laws, petitioned the Supreme Court for a review of the case, on the ground that the wage-fixing provision of the District of Columbia law differed fundamentally from the New York law, which prohibited the payment of an unreasonable or insufficient wage. The Court, however, denied the petition.

Hawes-Cooper Act.—The law which the Supreme Court supported was the Federal prison-labor law (Hawes-Cooper Act), which makes all prison-made goods entering a State subject to the regulatory laws of that State dealing with prison-made products, without the protec-

tion of Federal control of interstate commerce.

SOCIAL SECURITY

Social security programs consonant with that outlined in the Federal Social Security Act of 1935 had been launched in whole or in part by most of the States, by the close of 1936. Constitutional amendments were necessary in some States to authorize the enactment of that type of legislation, and these were secured. Seven States enacted unemployment insurance laws during 1936. These, in addition to the States which had already adopted such legislation, increased the coverage of unemployment insurance to about 45 per cent of the nation's pay rolls. The first state unemployment insurance system, that of Wisconsin, went into operation on July 1.

Old age assistance laws adopted by 16 States brought the needy aged of 42 States, two Territories and the District of Columbia under public protection, in most cases with the help of Federal grants, as provided in the Social Security Act. The Federal Government's far-flung old age security program was launched on Nov. 24, when applications for social security account numbers were mailed to approximately 26,000,000 workers entitled to insurance under the Federal retirement plan. By this plan, workers will receive monthly amounts, up to \$85, based on their earnings in their productive years, when they retire at the age of 65.

COST OF LIVING

Living costs in urban centers continued the very gradual but steady increase that began after the low point of the depression had been passed. Based on the average of costs in 1923-25, the index of all items comprising the cost of living of wage earners and low-salaried workers in representative cities throughout the country on Sept. 15, 1936, was 82.4. The most marked increase during 1936 was in the cost of food, which advanced from an index of 79.4 on April 15 to 84.3 on Sept. 15. Even with slight but gradual

* See "Supreme Court and Constitutional law," pp. 37-57.

increases during the year, rents at 64.6 were still materially lower than during the early depression period.

LABOR SCHISM ON UNIONISM ISSUE

The industrial unionism issue, carrying with it the threat of a definite schism, dominated both thought and action in the labor movement during 1936. The Committee for Industrial Organization, which had been formed at the close of 1935 by officials of eight international unions affiliated with the American Federation of Labor, held the center of the stage, so far as public interest was concerned, and its organizing activities seemed to overshadow other efforts.

This committee represents the joint purpose of certain labor leaders and international unions, under the leadership of John L. Lewis of the United Mine Workers, to organize the mass-production industries on an industrial, as distinct from a craft, basis. Selecting the steel industry as the point of attack, an intensive organizing campaign was begun in the spring under the leadership and with the financial support of the organizations comprising the Committee for Industrial Organization.

The original group was augmented from time to time. By the end of the year it consisted of ten international unions affiliated with the American Federation of Labor, the presidents of three other affiliated internationals who had identified themselves with the movement as individuals without committing their organizations, and two industrial unions not associated with the American Federation of Labor. These two independent unions are the Industrial Union of Marine and Shipbuilding Workers and the United Electrical and Radio Workers.

Charges brought by the executive council of the American Federation of Labor against the "dual" character of the committee and its activities led finally to disciplinary action. The executive council voted suspension of the ten affiliated organizations that

held membership, as unions, in the Committee for Industrial Organization. This suspension automatically barred these bodies from being seated in the convention of the American Federation of Labor held at Tampa, Florida, in November. The convention supported the action of the executive council and voted to continue the suspension of the ten unions pending further developments. Hence, the following organizations, three of which are among the largest labor unions in the country, at present stand suspended from the American Federation of Labor: Amalgamated Association of Iron, Steel and Tin Workers; Amalgamated Clothing Workers; Federation of Flat Glass Workers; International Association of Oil Field, Gas Well and Refinery Workers; International Ladies' Garment Workers' Union; International Union of Mine, Mill and Smelter Workers; International Union United Automobile Workers; United Mine Workers; United Rubber Workers, and United Textile Workers.

AMERICAN FEDERATION OF LABOR

At its 1936 convention the American Federation of Labor reported a total paid-up membership in good standing of 3,422,398, a figure which includes the ten suspended unions. Charters of affiliation issued during 1936 to three national unions—the American Newspaper Guild, the Brotherhood of Sleeping Car Porters, and the American Federation of State, County and Municipal Employees—brought the total of affiliated national and international unions in the Federation to 111.

Early in 1936, reports to the Bureau of Labor Statistics on union membership showed a total for the country as a whole of approximately 4,500,000 in 156 national and international unions, both affiliated and independent. Since then, considerable expansion has taken place, especially among automobile and radio and electrical equipment workers.

The 1936 convention of the American Federation of Labor reaffirmed the 30-hour week as its "paramount

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objective," declared against the formation of a labor party, and made several significant constitutional changes, the effect of which will be to increase the authority of the executive council over the component units of the Federation.

All the officers who were serving at the time of the convention were re-

elected without opposition. During the year, however, changes had been made in the composition of the executive council because of the resignations of John L. Lewis and David Dubinsky, vice presidents elected in 1935 who became identified with the Committee for Industrial Organization.

EMPLOYMENT CONDITIONS

BY ROYAL E. MONTGOMERY

ASSISTANT PROFESSOR, CORNELL UNIVERSITY

EMPLOYMENT TREND IN MANUFACTURING

The 1933-35 recovery in both employment and payrolls continued during 1936, the United States Bureau of Labor Statistics index of factory employment (1923-25 average=100) being 88.9 for August and 90.6 for September. Factory employment during the latter month was 8.2 per cent greater than during the corresponding month of 1935, and was also greater than during any month since June, 1930. A preliminary estimate for October (revised and adjusted to the Census of Manufactures totals for 1933) shows factory employment at the end of the tenth month of 1936 to have been 96.5 per cent of the 1923-25 volume. The average number of employees in American manufacturing enterprises during the first nine months of 1926 is estimated to have been 7,529,000, as compared with

6,398,000 during the same period of 1935 and 8,767,000 in 1929. The foregoing tabular summary indicates employment trends in all manufacturing, and, for comparative purposes, in the durable and non-durable goods industries.

The employment level indicated by the Bureau's index number of 90.6 for September (and by its preliminary estimate of 96.5 for October) should be compared with that obtaining at the depth of the depression. In March, 1933, as was indicated in THE AMERICAN YEAR BOOK for 1935, total factory employment was only 59 per cent of the 1923-25 average. Between January, 1933, and January, 1935, according to a report published by the Bureau of Labor Statistics in March, 1935, total factory employment increased by 30.6 per cent; and between January and December, 1935, the index of factory employment rose from 78.7 to 84.6, the average for the year, as the above table indicates, being 82.2. These gains, added to the just-summarized 1936 increase in employment, are indicative of the gains since factory employment fell to its low point in 1933.

Nevertheless, factory employment at the end of 1936 was still below the level of the mid-1920's, and even more below the 1929 level, when total employment was greater than in 1923-25. As the above table shows, employment in the non-durable goods industries had by September, 1936, re-

INDEXES OF EMPLOYMENT
(1923-25 AVERAGE=100)

	All manu- facturing	Durable goods group	Non-dur- able goods group
1934 average ..	78.8	65.8	92.7
1935 average ..	82.2	71.4	93.8
1936			
January.....	82.9	74.4	92.1
February....	83.1	74.4	92.6
March.....	84.1	75.7	93.2
April.....	85.1	77.6	93.1
May.....	85.7	79.2	92.7
June.....	86.0	79.9	92.6
July.....	86.8	79.7	94.4
August.....	88.9	79.9	98.7
September...	90.6	80.9	101.1

EMPLOYMENT CONDITIONS

turned to the level of 12 years earlier, but in the durable goods group it was less by about one-fifth, and in all manufacturing by about one-tenth. At the same time, the nation's total labor supply, and therefore the number of those who would have normally have become attached to manufacturing, had been increasing. Professor Leo Wolman, in a study for the National Bureau of Economic Research, has estimated that during the first nine months of 1936 factory employment was 14.1 per cent below the level of 1929, and 10.1 per cent below that of 1923-25.

One feature of the 1936 recovery

in employment was the sustained gains experienced in the durable goods industries, where the low spots in employment were to be found during the depression. It will be noted from the above table that while the index of employment in the durable goods industries remained disproportionately low at the beginning of the fourth quarter of 1936, the percentage increase in employment was more than double that experienced by the non-durable goods industries. Professor Wolman's study, referred to above, shows the following employment indexes (1929=100) for the entire period of the 1933-36 recovery:

	1933	1934	1935	1936 (first nine months)
Durable goods.....	54.9	67.7	73.4	80.1
Non-durable goods.....	85.0	91.9	93.0	93.7

The following table presents the United States Bureau of Labor Statistics' indexes for the durable and non-durable goods industries, the

changes during 1934-35 and during 1935-36, and, for illustrative purposes, the same data for selected industries coming within each category:

	Index of Employment August, 1936 (1923-25=100)	Per cent change August, 1935 to August, 1936	Per cent change August, 1934 to August, 1935
Durable goods.....	79.9	+13.3	+ 3.5
Non-durable goods.....	98.7	+ 4.7	....
Selected durable goods industries			
Iron and steel.....	85.4	+16.7	+ 6.7
Lumber and its products.....	59.5	+ 7.6	+12.9
Machinery.....	101.2	+15.9	+10.6
Agricultural implements.....	104.1	-11.6	+76.3
Electrical equipment.....	81.4	+15.6	+ 7.8
Stone, clay, glass products.....	61.9	+10.7	+ 5.3
Automobiles.....	97.0	+ 2.0	+ 2.8
Selected non-durable goods industries			
Textiles.....	98.5	+ 6.0	+ 5.3
Food products.....	115.9	+ 3.7	-10.0
Leather products.....	89.7	- .4	- 1.1
Tobacco manufactures.....	59.5	+ 2.8	-11.1
Chemicals and petroleum refining .	111.4	+ 3.2	+ .9
Paper and printing.....	99.6	+ 3.9	+ 2.2
Rubber products.....	88.1	+11.4	- 3.5

EMPLOYMENT IN MINING

As was true in 1935, employment in mining failed to increase in 1936 as it did in manufacturing. Except

for the metalliferous mines, gains were slight. The following table gives the employment indexes (1929=100) and the percentage changes in employ-

	Employment index, 1933	Employment index, 1935	Employment index, 1936	Per cent change Sept., 1935 to Sept., 1936
Anthracite.....	51.7	53.2	51.8	+ 3.5
Bituminous.....	67.9	76.7	77.8	+ 1.4
Metalliferous.....	34.6	47.3	59.1	+29.1

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ment between September, 1935, and September, 1936. The 1936 employment indexes are based upon an average of the first nine months.

BUILDING CONSTRUCTION

Both the value of construction contracts awarded and the volume of employment in building construction were greater in 1936 than in 1935, but both remained far below the pre-depression level. According to the Federal Reserve Board's index (1923-25 average=100) the value of all construction contracts awarded in 1935 was 37 per cent of the yearly average of the mid-1920's. Throughout 1935, however, there was an upward movement, the index (unadjusted for seasonal variations) rising from 22 in January to 53 in December. The early months of 1936 witnessed a slump in the volume of construction contracts awarded, and not until August was the index back to the level of the first month of the year. For the first ten months of 1936 (October figures being preliminary estimates), averaged together, the index of value of contracts awarded was 55.4 as compared with 100 in 1923-25, 117 in 1929, 25 in 1933, and 37 in 1935. The average for the first ten months of 1936 was, therefore, substantially above the average for the whole of 1935, but only slightly above that for the last month of 1935. Accurate statistics on the actual number of men employed in building construction are not available, but of a substantial increase during 1936 there can be no question. As the following table shows, the index of employment for each month between March and October showed an increase over both the preceding month and the corresponding month of 1935.

Owing to the severe depression the construction industry suffered during the first half of the 1930's; however, these gains probably did not bring the total volume of employment back to more than half that of 1929. Professor Wolman has estimated (1929=100; 1933-35 indexes based upon data collected by the U. S. Department of Commerce for its

PER CENT CHANGE IN EMPLOYMENT IN BUILDING CONSTRUCTION, 1936

	From preceding month	From corresponding month of 1935
January.....	-13.0	+ 3.9
February.....	-15.1	- 7.7
March.....	+28.3	+14.8
April.....	+15.5	+19.2
May.....	+13.0	+21.6
June.....	+ 4.3	+21.3
July.....	+ .8	+20.7
August.....	+ 6.1	+23.8
September.....	+ 1.9	+22.9
October.....	+ 2.4	+25.7

study of national income and the 1936 index an extrapolation based on percentage changes in employment in private construction reported by the U. S. Bureau of Labor Statistics) employment in private building construction to have been 31.9 per cent of the 1929 volume in 1933, 35.1 per cent in 1934, 39.0 per cent in 1935, and 45.7 per cent in 1936.

RAILROADS

Total employment on Class I railroads (exclusive of executives and officials) was only about 100,000 greater in September, 1936, than in the corresponding month of 1935, the average number of workers reported by the Interstate Commerce Commission being 1,097,401 during the ninth month of 1936 as compared with 996,726 in September, 1935. During the first ten months of 1936 employment averaged 59.3 per cent of the 1923-25 volume, as compared with 83.3 per cent in 1930, 70.6 per cent in 1931, 57.8 per cent in 1932, 54.4 per cent in 1933, 56.5 per cent in 1934, and 55.3 per cent in 1935.

FARMS

The Bureau of Agricultural Economics on Nov. 1, 1936, released revisions, made in the light of the findings of the 1935 Census of Agriculture and the reports of the Division of Vital Statistics of the Bureau of the Census, of its earlier estimates of farm population. The revised estimates show farm population on Jan. 1, 1936, to have been 31,809,000, as compared with 31,801,000 (pre-

EMPLOYMENT CONDITIONS

vously estimated at 32,779,000) on Jan. 1, 1935. The cityward migration noted in THE AMERICAN YEAR BOOK for 1934 and 1935 continued, the number going to farms being 825,000, the number migrating from farms to cities 1,211,000, and net loss by migration, therefore, being 386,000. This compares with a net loss by migration of 211,000 in 1934 and 227,000 in 1933. As was true in both of these years, the loss consequent upon the excess of the cityward migration over the farmward was in 1935 more than offset by the excess of births over deaths on the farms. Births reported during 1935 totaled 727,000, deaths 333,000. The natural increase in farm population was therefore 394,000, or 8,000 more than the loss in farm population due to the excess of cityward over farmward migration. The year 1935 was the third successive one in which the number going from farms to cities exceeded the number moving in the opposite direction, and the

cityward trend characteristic of every year from 1920 to 1929 must be regarded as re-established. In 1931 the two movements nearly balanced, and in 1932 more persons were reported as moving to the farms than moved away from them. By 1933, however, the loss of farm population due to migration was greater than it had been in 1930, and it increased still further during 1934 and 1935.

PUBLIC UTILITIES, TRADE, AND HOTELS

Employment in these, the steadier branches of industry, declined slowly during the depression, reached the low point in 1933, and then experienced gains during 1934. In both 1935 and 1936, however, employment increases were moderate. The following table shows the percentage by which employment was below the 1929 average during the years 1931-36 inclusive. The 1936 figures are based upon an average of the first nine months.

	1931	1932	1933	1934	1935	1936
Telephone and telegraph.....	13.4	20.9	29.6	29.7	29.9	28.3
Power and light.....	4.4	17.0	21.2	16.2	15.2	10.6
Electric railroads and motor bus.....	15.3	24.5	30.0	27.9	28.8	28.3
Wholesale trade.....	13.4	21.8	22.1	17.2	16.0	14.4
Retail trade.....	10.6	19.1	18.3	17.9	17.7	16.7
Hotels.....	8.3	21.0	25.1	19.8	19.0	16.7

PUBLIC EMPLOYMENT AND RELIEF WORK

Employment created by the Federal Government includes employment in the regular agencies of the Government, employment on the various construction programs wholly or partially financed by Federal funds, and employment on relief projects. The last three months of 1935 were characterized by the transfer of workers from relief rolls to employment on the Works Program established under the Emergency Relief Act of 1935, and with this transfer the virtual liquidation of the emergency program of the Federal Emergency Relief Administration. The adjoining tabular summary shows changes in employment in the more important

branches of work provided by the Federal Government between September, 1935, and September, 1936. A few of the less important types of employment created by the govern-

TOTAL EMPLOYMENT

	September, 1935	September, 1936
Executive service.....	794,679	836,154
Public Works Administration projects.....	344,520	323,266
Construction projects financed by Regular Governmental Appropriation.....	45,592	155,880
The Works Program ..	335,839	2,560,000
Emergency Work Program of FERA.....	885,765
Emergency Conservation Work (CCC)...	536,752	320,821

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ment, such as that in the judicial and legislative services and on construction projects financed by the Reconstruction Finance Corporation, have not been included.

The trend of employment created

by the Works Program, the Public Works Administration established in 1933, and the Civilian Conservation Corps, also established in 1933, during the first nine months of 1936 is shown in the following table:

	Projects Financed from Public Works Administration Funds	Projects Financed by the Works Program	Employment in Emergency Conservation Work (CCC)
January.....	197,820	2,812,391	478,751
February.....	176,764	2,950,481	454,231
March.....	202,236	3,095,261	356,273
April.....	264,427	2,875,299	391,002
May.....	315,393	2,579,937	407,621
June.....	349,572	2,395,423	383,279
July.....	347,346	2,412,462	404,422
August.....	342,901	2,462,590	383,554
September.....	323,226	2,560,701	320,821

PART-TIME EMPLOYMENT

Although the exact number of men working part time cannot be estimated accurately, one of the important trends during 1936 undoubtedly was the decline in the number of employees on part time and the increase in average weekly hours of those still on part time. Indeed, one of the significant characteristics of the 1933-36 period is that recovery is shown to be considerably greater when measured by the increase in wage payments than by the increase in employment. In view of the large number of workers kept on a part-time basis during the depression, the recovery manifested itself in a lengthening of the actual work week and, therefore, in an increase in total labor hours worked and total money wage payments in excess of the increase in the number of persons employed. As was pointed out in THE AMERICAN YEAR BOOK for 1935, more than half the wage-earners were probably working part time in 1932, and the codes of 1933-35 acted as a brake upon the movement to increase labor hours worked by lengthening actual weekly hours per worker rather than by hiring more men. In 1935 and 1936, however, labor hours worked increased considerably more than did the number of persons employed; in other words, the volume of part-time employment decreased. In manufactur-

ing average weekly hours increased from 34.7 in 1934 to 36.6 in 1935 and 38.5 in 1936; the volume of employment (as computed by Professor Wolman on the 1929 base of 100) increased from 78.7 in 1934 to 82.0 in 1935 and 85.9 in 1936 (first nine months); and total money payrolls advanced from 57.6 (1929 base) in 1934 to 65.3 in 1935 and 72.5 in 1936. The American Federation of Labor's data show that 20 per cent of union members were on part-time in October, 1936, as compared with 22 per cent in 1935, 24 per cent in 1934, and 21 per cent in 1933. The Federation's data do not, however, indicate the increase in the average weekly hours worked by those still on part time.

VOLUME OF UNEMPLOYMENT

The employment trends summarized in the preceding paragraphs suggest a substantial diminution in the volume of unemployment during 1936 and since the depth of the depression in 1932. In the absence of an inclusive census of unemployment since 1930, estimates still have to be based upon inferences drawn from the trend of employment, from calculations as to the total labor supply, and from scattering sources of information. The following are the estimates of the National Industrial Conference Board and of the American Federation of Labor:

CHILD LABOR

UNEMPLOYED WORKERS IN AMERICAN INDUSTRY

	National Industrial Conference Board Estimate	American Federa- tion of Labor Estimate
March, 1933	15,939,000	15,653,000
March, 1934	11,744,000	12,420,000
March, 1935	11,929,000	12,608,000
Jan., 1936	10,777,000	12,646,000
March, 1936	10,549,000	12,183,000
June, 1936	9,769,000	11,208,000
Sept., 1936	8,975,000	10,777,000 (August)

According to the Conference Board's estimate, then, unemployment was reduced by almost 7,000,000 between its peak in March, 1933, and September, 1936, and by 1,802,000 during the first nine months of 1936. Phrased in terms of ratios of the unemployed to the employed: in March, 1933, there were 16 unemployed to every 44 employed; in September, 1936, there were nine unemployed persons to every 44 employed.

RATES OF UNEMPLOYMENT AMONG TRADE UNION MEMBERS (AMERICAN FEDERATION OF LABOR RETURNS)

	All trades	Building	Metal	Printing	Other
1929 (average).....	12	25	7	4	8
1930 ".....	21	40	20	7	14
1931 ".....	26	52	39	13	17
1932 ".....	32	64	42	19	20
1933 ".....	31	67	43	22	22
1934 ".....	26	57	27	18	18
1935 ".....	23	52	22	15	17
1936					
January.....	22	50	17	15	18
April.....	18	41	15	12	15
July.....	17	27	11	12	16
October.....	12	22	11	11	10

CHILD LABOR

BY COURTENAY DINWIDDIE

GENERAL SECRETARY, NATIONAL CHILD LABOR COMMITTEE

UPWARD TRENDS IN CHILD EMPLOYMENT

The year 1936 showed a continuance of the marked increase in child labor which began as soon as the child labor provisions of the industrial codes became invalid following the decision of the United States Supreme Court declaring the NRA (National Recovery Administration) unconstitutional in May, 1935. Although no figures are yet available covering the country as a whole, the general trend is clear from the official reports furnished by the Federal Children's Bureau. There was an increase of more than 150 per cent in the number of 14- and 15-year-old children certificated for employment in the first five months of 1936 over the corresponding five months

of 1935, when the 16-year standard of the codes was in effect, according to reports from the areas in which there has been no change in the State child labor law and for which comparable data for both years are available (10 States, the District of Columbia, and 98 cities in other States). In round numbers 8,400 children in these areas were given regular employment certificates between Jan. 1 and June 1, 1936, as compared with 3,350 in the corresponding five months of 1935.

In the last seven months of 1935, after the outlawing of the NRA codes, the number of children leaving school for work was 53 per cent greater than during the 12 months of 1934 (12,000 as compared with 7,500).

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In the States and cities reporting on occupations entered by these children, manufacturing, mechanical and mercantile industries absorbed more than one-fourth of the children going to work after the protection of the NRA codes was removed as compared with only five per cent in 1934.

It must be borne in mind that these figures do not include children under 14 years or children working illegally without permits; also that they cover only children beginning full-time employment and entering industries for which permits are required which differ in various States. These partial figures, together with reports of State Labor Departments from some States and isolated cases reported in the press, are indisputable evidence that low-paid children are again entering the labor market to compete with adults and are securing jobs.

The Federal Children's Bureau, commenting on the increase in child labor, states: "It is true that numerically considered a total of even 12,000 children exchanging school life for work may not loom large in comparison with the thousands who continue their education until they become sixteen. But the fact that such an increase as is here shown could take place during a period when there was no scarcity of adult labor, and immediately following the experience under the NRA that demonstrated the practicability of eliminating child labor altogether, is of great significance to all who have at heart the welfare of the growing generation. As industrial conditions continue to improve, there is grave danger that children will again be drawn into industry in as large numbers as before the depression."

PROGRESS TOWARDS PERMANENT CONTROL OF CHILD LABOR

Few state legislatures met during 1936, and ratification of the Federal Child Labor Amendment was considered by only five. In three States it was rejected (Louisiana, Massachusetts and Mississippi) and in two it was killed in Committee (New

York and Rhode Island). The action of the legislatures apparently ran counter to the preponderance of public opinion as revealed in a poll on the proposed Child Labor Amendment conducted by the American Institute of Public Opinion and published in May, 1936. This first nationwide referendum of the actual voting population on the child labor issue showed 61 per cent of those answering in favor of the Amendment, and furthermore showed a majority opinion for the Amendment in 45 of the 48 States. In New York, where the Senate and Assembly Judiciary Committees refused to allow the measure to be voted upon, the popular vote on the poll was 63 per cent in favor of the Amendment; in Rhode Island where the Amendment was also killed in Committee the popular vote was 51 per cent in favor of the Amendment. In Massachusetts, Mississippi and Louisiana where the Legislatures voted down the Amendment, popular opinion for it was 56 per cent, 55 per cent, and 61 per cent, respectively. Commenting upon the results of the poll, Dr. George Gallup, Director of the American Institute of Public Opinion, stated: "It reveals dramatic clashes between the will of the public and action of State Legislatures in rejecting the Amendment."

During the year many groups added their names to the list of national organizations endorsing the Federal Child Labor Amendment. Most important was the American Farm Bureau Federation which previously had been opposed. Also significant was the resolution calling for immediate ratification of the Child Labor Amendment by the second and third National Conferences on Labor Standards called by Secretary of Labor Perkins. This action, taken by the state labor officials charged with the enforcement of state child labor laws, revealed the belief of the state labor authorities that Federal child labor legislation is not a substitute for or an encroachment upon local enforcement but would strengthen their own work.

CHILD LABOR

The only progress towards Federal control of child labor made during the year was the passage of the Walsh-Healey Act which contained a clause barring the use of child labor in the production of goods for government contracts.

STATE CHILD LABOR LEGISLATION

Rhode Island.—The state legislative sessions of 1936 were not notable for advances in child labor legislation. Rhode Island recorded the most striking gain in the passage of a law prohibiting the employment of children under 16 during school hours or at any time in manufacturing or mechanical establishments, limiting the hours for such children in business or mercantile establishments to 40 hours a week and eight hours a day and forbidding work after six p. m. Corresponding with this change in the laws relating to labor, the requirement for school attendance was raised from 15 to 16 years. Rhode Island also strengthened its industrial home work provisions, enacted a minimum wage law for women and minors and established a Division of Women and Children in the Department of Labor.

Massachusetts authorized the Department of Labor and Industry to investigate what trades, processes of manufacture and occupations are so dangerous that employment for minors between 16 and 18 should be forbidden.

New York prohibited the employment of persons under 18 years of age as employees or entertainers on premises used for retail sale of alcoholic beverages.

Virginia raised the minimum length of the school term from 140 to 160 days, and made a few minor changes in the child labor law including strengthening its regulations of work in hazardous occupations by minors under 18.

Louisiana and South Carolina each changed their methods of administering labor matters, through the creation of a state department of labor. In South Carolina, however, the department is given no

jurisdiction over timber, lumber and turpentine industries. South Carolina also passed a law establishing an 8-hour day and 40-hour week for employees in cotton, rayon, silk and woolen mills to be effective only when North Carolina and Georgia shall adopt the same requirements.

CHILD LABOR IN SUGAR BEET FIELDS

When the AAA (Agricultural Adjustment Administration) was declared unconstitutional, the child labor provisions incorporated in the Sugar Beet Adjustment Contracts introduced under the Jones-Costigan Act were terminated. In the summer of 1936 the National Child Labor Committee made a brief survey of child labor conditions in the sugar beet fields of Colorado, the leading sugar beet State, and Nebraska another important State for this industry, to determine what effect this decision had had. Under the Adjustment Contracts producers had agreed not to permit the employment of children under 14 years of age (except children of growers) and to limit the hours of work of children between 14 and 16 years to eight hours a day. The survey that summer revealed that all the child labor gains had been lost. In family after family interviewed, children who were not permitted to work last year, were again carrying a full load, including the 7- and 8-year-olds. Hours were absolutely unregulated and even the youngest frequently toiled from sun-up to sun-down. Many children were kept out of school for several weeks during the harvesting season, and in some areas schools were closed for what is called a "beet vacation."

SURVEY OF SOUTHERN LUMBER AND WOOD PRODUCTS

The National Child Labor Committee also conducted a survey of the lumber and wood products industry in the southern States. After extensive visits in South Carolina and less extensive visits in Georgia, Alabama, Mississippi, and Louisiana, from where the pine trees are tapped

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for their turpentine or lumber is cut for the mill to the manufacturing plants where such products as fruit crates, potato barrels and wooden baskets are made, the Committee reported a misuse of children which it called "as predatory in essence as anything that has gone on in this country since the days when the mills of New England 100 years ago advertised for children to do their work."

The report stated that in the outlying branches of the lumber industry some boys of 10 were found engaged in lumber mills, pole peeling and even logging, and the employment of 14-year-old children at jobs that tax the strength of grown men was not uncommon. The chipping and pulling of pine trees for turpentine and the hard and sticky work of gathering the turpentine was carried on largely by young workers.

The dangers involved from unguarded belts and saws and defective boilers in the "grasshopper" mills scattered over the lumber territory, as well as some of the field operations, such as pole peeling, were characterized by the Committee as "a menace not only to the children employed in them but to even older youths too immature for such hazardous occupations."

In these lumber and turpentine industries the rate of pay for the children was extremely low. A father and two young sons made less than 20 cents an hour for the three for hauling logs; dipping turpentine brought about 50 cents for a 12-hour day.

In the areas covered many schools were run on short terms or closed when workers were needed. In some places there was no attendance officer and illiteracy rates were high. Dozens of children were found in forest districts who either had at-

tended no school for years or were struggling along in first to fourth grades—usually two to six years retarded.

In some communities the National Child Labor Committee found equally great exploitation in basket, crate and veneer factories. Boys of 12 were used as machine helpers, and boys of 14 were operators. A 10- or 12-hour working day and a wage of 75 cents, less for helpers, were the rule, though a 17-year-old boy might get \$1 for 10 hours as machine relief operator—at a piece rate set to hold even speedy and experienced men to \$2 a day.

NEW PUBLICATIONS

The American Child (published monthly); *Annual Report for the Year Ending September 30, 1936*, by Courtenay Dinwiddie, General Secretary, National Child Labor Committee; *Annual Summary of State Legislation, 1936* (mimeographed); *Handbook on the Federal Child Labor Amendment*, May 1936; *Child Labor in 1935-1936: A Compilation of Reports on Child Labor Conditions Since the NRA was Declared Unconstitutional*, June 1936 (mimeographed); *Child Labor Facts, 1937* (in preparation), (National Child Labor Committee, New York, N. Y.); *Children Engaged in Newspaper and Magazine Selling and Delivering*, Bureau Publication No. 227, 1935; *The Trend of Child Labor in 1936*, Nov. 7, 1936 (mimeographed); *Child Labor After the NRA Was Declared Unconstitutional*, March 25, 1936 (mimeographed, Children's Bureau, U. S. Department of Labor, Washington, D. C.); *Handbook of Labor Statistics*, 1936 Edition, Bulletin No. 616, 1936, (United States Department of Labor, Washington, D. C.).

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| AMERICAN ASSN. FOR LABOR LEGISLATION, 131 E. 23rd St., New York City. | ACTION, 112 E. 19th Street, New York City. |
| AMERICAN FEDERATION OF LABOR, A. F. of L. Building, 9th and Massachusetts Ave., N. W., Washington, D. C. | LEAGUE FOR INDUSTRIAL DEMOCRACY, 315 Fourth Ave., New York City. |
| AMERICAN FEDERATION OF MUSICIANS, 1450 Broadway, New York City. | MARINE ENGINEERS' ASSN., 157 Chambers St., New York City. |
| INTERNATIONAL ASSN. OF GARMENT MANUFACTURERS, 40 Worth St., New York City. | NATIONAL ASSN. OF LETTER CARRIERS, A. F. of L. Building, 9th and Massachusetts Ave., N. W., Washington, D. C. |
| INTERNATIONAL ASSN. OF MACHINISTS, 265 W. 14th Street, New York City. | NATIONAL CIVIC FEDERATION, 570 Lexington Ave., New York City. |
| INTERNATIONAL LONGSHOREMEN'S ASSN., 265 W. 14th Street, New York City. | NATIONAL FEDERATION OF POST OFFICE CLERKS, A. F. of L. Building, 9th and Massachusetts Ave., N. W., Washington, D. C. |
| INTERNATIONAL SEAMEN'S UNION OF AMERICA, 666 Lake Shore Drive, Chicago, Ill. | NATIONAL INDUSTRIAL CONFERENCE BOARD, 247 Park Ave., New York City. |
| JUNIOR ORDER OF UNITED AMERICAN MECHANICS, 3029 N. Broad St., Philadelphia, Pa. | NATIONAL INDUSTRIAL COUNCIL, 11 W. 42nd St., New York City. |
| LEAGUE FOR INDEPENDENT POLITICAL | PILOTS' ASSOCIATION, 119 Broad St., New York City. |
| | UNITED LICENCE OFFICERS, 15 Whitehall St., New York City. |

DIVISION XVII

RELIGION AND RELIGIOUS ORGANIZATIONS

PROTESTANT DENOMINATIONAL ACTIVITIES

BY HERMAN C. WEBER

EDITOR, *Year Book of American Churches*

PREACHING MISSION OF THE FEDERAL COUNCIL OF CHURCHES

The outstanding event in Protestantism during 1936, was the "preaching mission" organized by the Federal Council of Churches of Christ in America. It was suggested in 1934 by the Rev. Hugh T. Kerr, pastor of the Shadyside Presbyterian Church, Pittsburgh, Pa., proposed to the Federal Council biennial meeting by the Rev. William Hiram Foulkes, First Presbyterian Church, Newark, N. J., chairman of the Evangelistic Committee, and organized and carried out by the succeeding committee of which the Rev. W. S. Abernethy, pastor of Calvary Baptist Church, Washington, D. C., was chairman. Seventy-nine missionaries participated in the three-month mission, beginning in September, 1936. The Rev. E. Stanley Jones, Methodist missionary in India, and Miss Muriel Lester of Kingsley House, London, were recruited from abroad. Twenty-eight cities were visited. The attendance at the various types of meetings (mass-meetings, seminars, conferences, etc.) averaged over 100,000 per city. Thousands of ministers of all denominations were reached and greatly strengthened in their psychology and their faith. The final mass meeting on Dec. 7 in Madison Square Garden, New York City, brought 18,000 Protestants together. The demonstration of unity in spiritual understanding and the proclamation of religion

as a vital need by the teams which included representatives of all major Protestant groups, even those in very tenuous relationship, or even outside the Federal Council, brought the question of a faster approach to Protestant unity to the fore. The *Christian Century*, organ of liberal opinion, went so far as to suggest that the word "Federal Council" be dropped from the designation of the body sponsoring the Preaching Mission and its true name be "The United Church of Christ in America." The report of the missionaries was made at the biennial meeting of the Federal Council at Asbury Park, N. J., on Dec. 10, to an overflowing audience of delegates and visitors.

STEWARDSHIP CONFERENCES

During the year the tide of support of the work of the Churches continued its rise. This did not, however, keep pace with the rise of business or of income and gave great concern to the leadership of the larger communions. Evidences accumulated that earnest religionists everywhere were aroused and felt that a renewed effort should be made to present the claims of character building institutions and programs to offset the rise of character-undermining enterprises such as the liquor-traffic, the gambling mania, the anti-thrift philosophies, the something-for-nothing economic experiments. The United Stewardship Council, representing 23 denominations, arranged

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for a conference which was held at Dayton, O., Nov. 23-24, to discuss stewardship ideals and plans. In 1935, the conference was attended by about a dozen representatives; in 1936, there were nearly 300 and deep interest. The conference was addressed by Bishops Cushman and McConnell, Ex-Moderator Vance of the Presbyterian Church, Presidents Marts of Bucknell College and Spencer of Franklin, and others. The representatives of the 23 denominations involved were expected to carry the impetus of the conference into their groups for the revivification of the stewardship movement. The Religion and Welfare Recovery Movement called a stewardship conference of three faiths—Catholic, Protestant and Jewish—at the Hotel Commodore in New York City, Dec. 3, in which not only church but welfare and philanthropic organizations were represented.

CHURCH STATISTICS

The most reliable statistics of church membership are provided by the decennial Federal census of religious bodies. The last census was taken in 1926 and its results made available by publication in 1929 through the Government Printing Office. The year 1936 was the regular time for the census (previous ones in 1906 and 1916). Difficulties arose in the appropriations committee in the House of Representatives, however, and the item was stricken out. By the intervention of the President after very general protest, not only by religious bodies, several of which took definite action at their official meetings during the year, but also on the part of social agencies, money was found in a modest amount and the Commerce Department Census Bureau freed for this very valuable work. The date of the census will, however, be 1937. The next reliable statistics are those published annually by the *Christian Herald* which Dr. George L. Kieffer edits. These are obtained directly from the responsible clerks or statisticians of over 200 bodies listed in the census of 1926, with such additions or exclusions as are needed from time to time.

These tables come under fire annually because they have been indicating large increases in church membership and this seems to some observers contrary to reason. The most recent report is given on next page. There are some very old figures in the tables (Church of Christ, Scientist, 1926; Jewish Congregations, 1926) and there is a percentage of estimated or even of dubious reporting. But the totals are concerned with large figures, and drawn from sufficiently honest and competent sources. Statisticians may handle them confidently and others may trust them sufficiently. They must not be pressed beyond their sociological or statistical limitations, of course. They do not represent a one-hundred per cent religious community present at every religious service or perfect in support of or interest in organized religion.

NORTHERN BAPTISTS

The Northern Baptist Convention met in St. Louis, Mo., for its annual session, May 20-24, 1936. Accredited voting delegates numbered 1,406. At a session, however, in which the Southern Baptists participated on May 19, 10,000 Baptists of both bodies were in attendance, and Dr. Toyohiko Kagawa of Japan and Dr. George W. Truett of Dallas, Tex., addressed them. It was reported that missionary offerings had increased \$121,500 in spite of the loss of some large individual gifts. Considerable controversy was expected over the report of the Committee on Christian Social Action. This report was presented May 25 by Dr. C. L. Seasholes, of Dayton, O. It was received with an overwhelming vote. The report confined itself largely to a study of the problems rising out of liquor traffic, the church in city life, young people, and the church and peace education. It reported returns on a peace plebiscite. Of the first 10,000 ballots, 42.5 per cent approved of bearing arms in case of attack, 27.6 per cent were ready to refuse service in any and all wars, and two per cent only

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TABLE OF CHURCH MEMBERSHIPS

(The years vary for the different bodies, the majority using the calendar year. The figures are mostly for the year 1935 and years ending some time in 1935.)

Larger Bodies (Over 50,000 members)	Inclusive Membership All Classifi- cations	Increase over Previous Year	Adult Membership (13 years and over)
Adventists, Seventh Day.....	149,595	4.3%	149,595
Assemblies of God.....	170,413	7.2	152,860
Baptists, Northern.....	1,475,736	0.3	1,412,279
Baptists, Southern.....	4,389,417	2.6	4,121,663
*Baptists, American Association.....	263,484	...	260,876
Baptists, National Conv., (col.).....	3,697,273	1.2	3,383,005
*Baptists, Free Will.....	79,650	...	78,227
*Baptists, Primitive.....	103,125	...	103,125
Brethren (Conservative Dunkers).....	160,335	1.0	149,913
Brethren, United.....	409,874	0.5	372,166
*Church of Christ, Scientist.....	202,098	...	202,098
Church of God (Anderson, Ind.).....	85,529	0.3	78,980
*Church of God in Christ.....	200,470	...	190,470
Church of the Nazarene.....	127,649	6.4	121,471
Congregational and Christian.....	1,012,953	0.7 d	986,211
Disciples of Christ.....	1,608,752	0.7	1,494,531
*Churches of Christ.....	433,714	...	433,714
*Eastern Orthodox: Greek.....	289,000	...	279,000
*Eastern Orthodox: Russian.....	526,000	...	377,142
*Eastern Orthodox: Serbian.....	100,000	...	75,000
Eastern Separate: Armenian.....	105,250	5.2	94,196
Episcopalian, Protestant.....	1,897,136	0.07 d	1,400,086
Evangelical.....	225,055	3.3 d	216,503
Evangelical and Reformed.....	920,589	0.6	695,658
Foursquare Gospel.....	252,380	0.9	214,803
Friends (Orthodox).....	86,913	0.02	72,572
Jewish Congregations.....	4,081,242	...	2,930,332
Latter Day Saints.....	666,594	2.3	512,611
Latter Day Saints, Reorganized.....	98,120	1.8	92,000
Lutheran, United.....	1,503,803	1.8	1,112,814
Lutheran, American Conference.....	1,436,226	1.5	1,020,604
Lutheran, Synodical Conference.....	1,495,947	2.4	1,042,957
Methodist Episcopal.....	4,345,108	0.7	3,962,738
Methodist Episcopal, South.....	2,751,354	1.1	2,466,775
Methodist Episcopal: African.....	650,000	...	581,750
Methodist Episcopal: African Zion.....	597,785	1.2	520,671
Methodist Episcopal: Colored.....	374,440	0.8	335,873
Methodist Protestant.....	199,498	3.8	185,334
*Polish National Catholic.....	150,000	...	103,500
Presbyterian: Cumberland.....	70,274	4.2	66,410
Presbyterian: United.....	179,338	0.1 d	171,088
Presbyterian, U. S. (Southern).....	477,467	0.8	441,657
Presbyterian: U. S. A.....	1,909,487	1.1 d	1,834,487
Reformed, Christian.....	116,792	0.3	79,185
Reformed in America.....	160,065	0.2 d	157,504
Roman Catholic.....	20,609,302	1.0	14,797,479
Salvation Army.....	259,101	17.1	103,640
Unitarians.....	60,574	8.5 d	59,968
Universalists.....	51,091	1.5 d	50,427
TOTALS LARGER BODIES.....	61,212,998	1.0	49,745,742
TOTALS SMALLER BODIES.....	1,465,179	1.0	1,289,807
GRAND TOTALS ALL RELIGIOUS BODIES AS REPORTED	62,687,177	1.0	51,035,549

These figures are taken from the *Christian Herald* tables, June, 1936.

* Old reports.

d Decrease.

would bear arms without question whenever Government declared war.

A layman, H. B. Clarke of North Adams, Mass., was unanimously elected president of the Convention for the new year. A fraternal dele-

gate from the Disciples Church, the Rev. George A. Campbell, of St. Louis, Mo., aroused great enthusiasm by suggesting closer fellowship and started discussions of union between these two bodies, holding, as Dr.

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Campbell phrased it, "very similar positions on all moral, doctrinal and social matters." A joint commission was also proposed to work out closer cooperation between the Colored National Convention, the Northern and the Southern Conventions. A suggestion also came from the General Baptist Convention for organic-union.

THE SOUTHERN BAPTIST CONVENTION

The Southern Baptists met at St. Louis, Mo., May 14-18, 1936. The Rev. John R. Lampey, president of the Southern Baptist Theological Seminary at Louisville, Ky., was re-elected president. A very conservative group of "messenger" from the adjacent border territory of the Southern Baptist Association was reported to be in control of the Convention. This crucial social service issue came into a partially unsympathetic atmosphere. The report of the social service commission presented resolutions covering the liquor traffic, lynching, Sabbath observance, and Federal appropriations to religious organizations, but no statement about economic conditions. A proposal had come before the Convention to establish a bureau for social service research. The committee reporting suggested that the commission already in service be strengthened and financed. A minority report urged that this be not done. Both reports were tabled after a vote so close that it had to be counted. The Hundred Thousand Club, promoted by the Rev. Frank Tripp, of St. Joseph, Mo., without salary, reported the raising of \$492,238 towards paying convention board and institution debts. The Club was continued with provision for an employed promotional director.

Fellowship meetings with the Northern Baptist Convention were held May 18 and 19, the period between the meetings in the same auditorium of the Northern and Southern Conventions. It was reported that the Southern Convention churches had approximately 200,000 baptisms during the year, with a net gain of more than 100,000. An increase of at least

500 in number of Sunday schools was recorded. Benevolence contributions increased about 11 per cent.

THE CONGREGATIONAL AND CHRISTIAN CHURCHES

The biennial meeting of the General Council of this body was held at Mt. Holyoke College, South Hadley, Mass., June 16-23. Roger W. Babson was elected moderator of the Council and President Mary E. Woolley of Mt. Holyoke College was made honorary moderator. The Council remembered the loss of its honorary moderator, the Rev. S. Parkes Cadman, during 1936, as well as the death of the moderator, the Rev. Jay T. Stocking, elected in 1934. The outstanding organizational question at the Council meeting was the report of a strategy committee appointed in 1934. This committee studied the relationship of the boards and agencies, recommending that six corporations and one other agency be unified and their work in home missions conducted by a single corporation to be organized. This will bring under one corporation the Home Missionary Society, the Church Building Society, the Sunday School Extension Society, the American Missionary Association, the Education Society, the Publishing Society and the Council for Social Action. In addition to this proposed consolidation, the strategy committee recommended that the promotional body be confined to voting members of the prudential committee of the Foreign Board and the board of directors of the Home Boards. The previous members-at-large were omitted from the set-up so that the directors of promotional work will be under the boards rather than under the Council. The general theme of the Council meeting was "The Effective Church." It was decided to hold a denominational plebiscite on questions concerning the economic order just before the convening of the General Council in 1938. For two years these churches propose to study and discuss these questions. A plebiscite in 1938 will compare with the peace plebiscite held during the 1934-36 biennium.

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DISCIPLES OF CHRIST

The international convention of the Disciples of Christ met at Kansas City, Mo., Oct. 12-18. The peak attendance was 6,000, not as great as has happened before, but the registrations (2,650) were greater. It was reported that the convention went further in declarations concerning the Church and the chaplaincy, military training in the schools, questions of peace and war, human liberties and freedom for minorities, than ever before. Unified promotion received an enthusiastic endorsement and emphasis was placed in this respect on the strengthening of local parish work and advance work in stewardship. It was determined that the executive committee of the convention itself should have more power, and a program committee was set up from which secretaries of the agencies of the fellowship were barred. A peace poll was proposed for Armistice Sunday, a plebiscite of the membership of more than 1,000,000 of this religious body.

THE LUTHERAN CHURCH

The Lutherans are divided into three groups, the United Lutherans, the American Conference and the Synodical Conference. Strenuous efforts have been made during the past two years to bring these bodies closer together. Commissions met and reported some progress at the biennial conventions both of the United and American Lutherans. Two meetings were held in 1936 of representatives of the United Lutheran Church and the Missouri Synod, the leading group in the Synodical Conference. The executive committee of the Lutheran World Convention met in New York the first week in October and brought to Lutheran circles Bishops Marahrens and Meiser and Dr. Hanns Lilje of Germany, who were enthusiastically received at the conventions of the United Lutheran and the American Lutheran Churches. A serious loss to World Lutheranism was the death in June of the Reverend John A. Morehead, president

of the Lutheran World Convention from 1923 to 1935.

The United Lutheran Church met at Columbus, O. Under its perennial president, the Rev. F. H. Knubel, it adopted an aggressive promotional plan to stimulate greater interest and activity in support of the general missionary and educational work of the Church. Action was taken consolidating the American Mission Board, the Committee on Moral and Social Welfare and the Committee on Evangelism under the direction of the Executive Board. A special fund for church extension to mark the twentieth anniversary of the Church was authorized.

The American Lutheran Conference held its biennial convention in Columbus in November. It received reports from 14 commissions representing the coordinated work of the five bodies which make up the Conference. Of these bodies the Augustana Synod celebrated its 75th anniversary in 1935. The American Lutheran Church consolidated four colleges and junior colleges into Wartburg College, Waverly, Ia. The Norwegian Lutheran Church appointed a committee on fellowship to confer with other Lutheran bodies for closer relationships.

The Synodical Conference held its triennial convention at Indianapolis. Its chief activity is the operation of growing work among American Negroes.

THE METHODIST EPISCOPAL CHURCH

The Methodist Episcopal Church met in its quadrennial conference at Columbus, O., March 1, 1936, and voted to spend only 20 days in session instead of the usual month. Outstanding interest attached to the election of bishops. The leading nominee on the first ballot was the president of Depauw University, the Rev. G. Bromley Oxnam. He withdrew his name but was later drafted again, elected, and received an ovation when he was escorted to the platform by Bishops McConnell and Blake. The Rev. William Emery Hammaker of Youngstown, O., Chancellor Charles Wesley Flint of

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Syracuse University, and a Negro, the Rev. Alexander Preston Shaw of Los Angeles, were also elected to the bishopric. Seven bishops were retired because of age. Nominations to this office were declined by some of the outstanding pastors because of the transformation the office seems to be undergoing in Methodism. Sentiment appeared to be in favor of a limited term and changed powers for the bishopric. On social matters the actions taken were very conservative. The threatened attack on the Methodist Federation for Social Service did not materialize. By inference Bishop McConnell and Prof. Harry F. Ward of this Federation, still possessed the confidence of the Church. Funds were refused for the peace commission of the Conference.

A considerable flurry was caused by a change in the presidency of the Board of Education. Bishop Adna W. Leonard was substituted for Bishop Edgar Blake, and this change brought some reorganization of the staff.

During the year great progress was made in the proposed union between the Methodist Episcopal Church (4,345,108 members), the Methodist Episcopal Church, South (2,751,354) and the Methodist Protestant Church (199,498). The proposed union, when it came to a vote in the Conference, was endorsed 470 to 83.

On Nov. 10 the Board of Bishops, meeting in Scranton, Pa., launched a "Million Unit Fellowship Movement." The objectives were reported as (1) the inspiration and renewal of personal devotion, (2) the mobilization of resources for study and action, (3) the stabilization of Methodist opinion for the Christian way as over against communism or fascism, and (4) the renewal of devotion to world vision. It was recommended to enlist 1,000,000 "units" (or subscriptions) of \$1 per month for Methodist missions and benevolences.

PRESBYTERIAN CHURCH, U.S.A.

This body met in Syracuse, N. Y., May 28, for the first time in many years without the presence of a vociferous group of commissioners

followers of the Rev. J. Gresham Machen, absorbing a good deal of the time of the Assembly. The launching of judicial process against them for violation of their constitutional vows had prevented their being elected commissioners, and the number of sympathizers with them in the Assembly was negligible. Their cases had been adjudged in the lower courts and came to the Judicial Commission of the Assembly for final appraisal. The reading of the final judgments by the Commission was a solemn matter, especially as the leaders were ordered suspended from the ministry for disobedience and reprimanded for unethical conduct. They were later deposed from the ministry by their judicatories on refusal to repent. Some of them, with other sympathizers, organized a new denomination called "The Presbyterian Church in America." Against the use of this name the officers of the Presbyterian Church protested and the matter was referred to the courts for adjudication. With this long-continued struggle out of the way, the Assembly addressed itself to other matters, especially to deliverances on social matters. A new department was set up in the Board of Christian Education on social action to which all social questions may be referred and which will assure ample reporting time at the Assembly meetings.

An observance of the Centenary of the Whitman-Spalding crossing of the Rockies into the Northwest Territory was one of the features of the Assembly and led to the proposal of a year's program centered on the thought of "Pioneering." Preparations were made to observe the centenary of the Board of Foreign Missions in 1937-38.

A proposal to eliminate from the Confession of Faith a sentence concerning the right to wage war, was ordered sent down to the presbyteries. It was called the "Cayuga Overture" from its origin in the Presbytery of Cayuga. Adoption by two-thirds of the 279 presbyteries is required before it can become final.

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SOUTHERN PRESBYTERIAN CHURCH

This body met in Augusta, Ga., observing its 75th anniversary in the same church where it was organized as the Presbyterian Church in the Confederate States in 1861. Dr. Frank Price of Nanking, China, was elected moderator. Representatives of the Presbyterian Church, U.S.A., the moderator, the Rev. Joseph A. Vance and the senior secretary for foreign missions, Robert E. Speer, were present and made significant addresses. Several overtures raising the question of merging were presented. A special committee was appointed to consider them, and this committee, made up of divisive elements, brought in a unanimous report which reopened the matter for discussion in 1937, through the appointment of a committee to study the question. A social program was adopted.

THE UNITED PRESBYTERIAN CHURCH

This body met May 27, 1936, in its 78th General Assembly, at Pittsburg, Kan. It chose the Rev. R. W. Thompson, of Monmouth, Ill., as its moderator. The Assembly set its missionary budget at \$474,000, an increase of \$12,000 over the previous year. It also recommended as a fixed policy an ever-increasing missionary budget. The most important matter

discussed was a proposal for centralized financial control, to include a committee of finance, a central treasurer, a custodian of all permanent funds and a merger of the boards of education and publication. The proposal was defeated by the same narrow margin which marked the defeat of the union project with the Presbyterian Church, U.S.A. the year before. In each case the Assembly was first strongly opposed and then almost won over.

THE REFORMED CHURCH IN AMERICA

The General Synod of this body met in Rochester, N. Y., in June. It elected a man under 40 for the first time in 72 years to be its president, the Rev. F. Raymond Clee, of Jersey City, N. J. A pre-synod conference on stewardship and evangelism was held with great success. The president was directed to inaugurate an itineration through the Church for the stimulation of an advance in church attendance, in membership and in giving. This itineration was carried out in September and October. The centenary of the Ministers' Fund in 1937 provided an occasion for the presentation of a contributing pension plan for ministers and a corresponding arrangement for lay workers in the service of the Church.

INTERDENOMINATIONAL ACTIVITIES

By PRESTON KING SHELDON

EDITOR AND WRITER

TOYOHICO KAGAWA, JAPANESE CHRISTIAN

Fourth Visit to U. S.—Until the year 1936, there had never been undertaken in so extensive a manner a unified program of personal and social evangelism such as that in the United States and Canada during a visit of six months by Toyohiko Kagawa, Japanese Christian labor leader and head of the Kingdom of God Movement in Japan. Dr. Kagawa came late in December, 1935.

He began his tour at Amarillo, Tex. after being detained at San Francisco by the immigration authorities because he was afflicted with trachoma. Following an appeal to President Roosevelt he was released. Dr. Kagawa's visit was sponsored by the Federal Council of Churches of Christ in America, the International Missionary Council and the Cooperative League of the U.S.A., in cooperation with federations of churches in cities where he spoke. This visit

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was the fourth he had made to the United States.

INDIANAPOLIS SEMINAR

As the year closed he was speaking in Indianapolis, at a seminar sponsored by the Federal Council, where he stressed consumers' cooperatives as the "economic expression of Christianity." He was heard there by 350 delegates representing religious groups, including state and local church councils and federations. The position churches should take toward cooperatives, chiefly in the field of education and spiritual motivation, was discussed. Two days were given over to addresses and a third was used for an inspection of cooperative business and industrial establishments in nearby Indiana towns. Government officials were present as unofficial observers. The meetings were held at the First Baptist Church of Indianapolis. Additional speakers were: Murray Lincoln, secretary of the Ohio Farm Bureau Cooperative Association; I. H. Hull, general manager of the Indiana Farm Bureau Cooperative Association and president of National Cooperatives, Inc.; Howard A. Cowden, secretary-treasurer of the latter organization; John W. Edelman, research secretary of the American Federation of Hosiery Workers; J. L. Reddix, president of the Consumers' Cooperative Trading Company, Gary, Ind.; Adolph Krahl, director of public relations of the Pure Milk Association, Chicago, and E. R. Bowen, general secretary of the Cooperative League of the U.S.A.

DR. KAGAWA'S RAUSCHENBUSCH LECTURES

Eventually Dr. Kagawa spoke in 150 cities in the United States and in two provinces of Canada, and it was estimated that he was heard by about 750,000 persons. As the tour progressed newspapers published reports of the meetings and magazines used articles discussing his philosophy. The primary object of his visit, however, was for the most part overlooked. For his itinerary was built around an arrangement for him to give a series of lectures in April at

Rochester, N. Y., on the Rauschenbusch Foundation at Colgate-Rochester Divinity School, founded some years ago to commemorate the life and work of Professor Walter Rauschenbusch, who held the chair in church history before the World War at Rochester Theological Seminary, as the institution was then known. Dr. Rauschenbusch was considered the most influential figure in this country in promoting the idea of a social gospel. He studied cooperatives while abroad and on his return began to write and to speak in favor of them, publishing *Christianity and the Social Crisis* and *Christianizing the Social Order*. He died in 1918. Until the arrival of Dr. Kagawa his works were practically forgotten.

GROWTH OF COOPERATIVES

The influence of Dr. Kagawa's addresses and the conferences held in connection with them was so great that the Cooperative League and religious leaders expressed concern over the rapid springing up, particularly in the West, of new cooperative clubs as Kagawa came and went, because of a dearth of leaders educated in the cooperative philosophy. In Kansas City alone, 55 prayer groups were organized before Kagawa came there and new cooperatives had already been started. The issuing of pamphlets and study courses both by the Cooperative League and church groups became widespread in an effort to meet educational needs.

Over and over Kagawa stressed in his speeches that economic freedom and security for nations as well as individuals could come only through the elimination of the profit motive from business and industry. He advocated international cooperative trade as a means of doing away with war. He said that "we must abolish the causes of war before we talk disarmament." He discountenanced international conferences hitherto held in the interest of arms limitations as being confined to discussions of "the diameter of cannon."

By 1936 the cooperative movement had grown to include 100,000,000 members in 39 countries, having rep-

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resentation in the International Co-operative Alliance which had for 28 years been publishing the *Review of International Cooperation* as its official organ, issued monthly in English, French and German editions. The alliance was founded by leaders interested in promoting world peace. But the point of departure from the ideals of the earliest exponents of socialism was made when the pioneers in the cooperative movement began to think and act in the interest of themselves as consumers rather than laborers, thus setting up a new economic philosophy which embraced the needs of the entire human race without overlooking in the least the needs of labor.

BASES OF THE COOPERATIVE MOVEMENT

The philosophy of the cooperative movement has both an economic and a moral basis. From the economic standpoint cooperative business and industry is controlled by open, voluntary membership, with one vote to a member, regardless of number of shares owned, and provides for the payment of savings returns to purchasers in proportion to their purchases. From the moral standpoint, the amount of capital owned by each member as well as the interest received thereon, is limited; a neutral stand is taken toward politics, religion and race; business is done for cash, and extensive educational programs are undertaken to teach consumers the value of working for and with their neighbors.

The meeting of the material needs of men under motives of justice, given impetus by religious idealism, constitutes the basis of the new, modern emphasis on a social gospel. Dr. Kagawa's attitude is that "material things are only one side of Christian living," however, and he insists also on preaching sermons. But his messages are totally devoid of lumbering thinking, abstract metaphors and theological floundering in the field of spiritual knowledge and faith. Advocates of dogmatic adherence to the doctrine of a "personal Saviour," or "a personal God," the

exact implications of which never have been made clear to many, had little sympathy with Kagawa in his combination of personal evangelism with Christian Socialism. In fact many of them protested his visit. They continued to insist on a need of "personal salvation" to be attained by mere repentance based on introspection, revising of personal habits and the acceptance of established creeds and rituals, with slavish adherence to tradition and authority. But none of the clergymen who learned to understand with Kagawa the need of the promotion of economic security, and of getting at the root causes of war, ceased to uphold essential Christianity. They saw, as he saw, a means of transforming society by beginning with individuals and destroying their faith in materialism and violence and substituting Christian love and forbearance.

WORLD SUNDAY SCHOOL CONVENTION

Dr. Kagawa's visit ended at Lake Geneva, Wis., June 27 to 30, at an international conference in which the major emphasis was on religious and missionary work. He said goodbye the night of June 30 over a national radio hook-up of 50 stations, leaving immediately for Oslo, Norway, to attend the twelfth World Sunday School Convention. With him went J. Henry Carpenter, executive secretary of the Brooklyn Church and Mission Federation, who had charge of Kagawa's tour in the East. A total of 877 officially registered delegates attended from North America, of whom 820 were from the United States. In addition about 300 others from this Continent were present, making the largest representation at any World Convention held outside the United States in 50 years. Many toured cooperative centres in Scandinavia under an impetus received from addresses and reports of the work by Kagawa in Japan and the United States.

THE CHRISTIAN COOPERATIVE FELLOWSHIP

Out of the international conference at Lake Geneva, Wis., June 27-30, 1936, grew a new organization known

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as The Christian Cooperative Fellowship in North America, and having as its executive secretary Blaine E. Kirkpatrick who served the conference as chairman of its educational committee. The conference was generated by a coordinating committee of missionary and cooperative business leaders on "philosophy, objectives and continuing program." In a leaflet, leaders of the new group described their effort as "a fellowship of those who believe that the cooperative way of living must be both speedily learned and practiced if we are to achieve a civilization which can honestly be called Christian." An "imperative and tragic need" was seen for something to be done. The conviction was expressed that "the initiative of pioneer days has crystallized into a selfish individualism," the evils of which "threaten man's destruction." A "vast concentration of economic and consequent political power in the hands of the owning few constitutes a deadly peril," it was stated in the preamble. The resultant effects, it was concluded, were "class war, mounting armaments and the growing menace of world conflict." The purposes were thus stated:

"The Christian Cooperative Fellowship is an unofficial and voluntary fellowship of both young people and adults of like purpose from many walks of life. Its essential desire is to work, in so far as possible, with and through the various denominational, interdenominational, missionary and other agencies having similar goals and employing Christian methods. It does not propose to duplicate the activities of any of the established church organizations, but rather to stimulate and, where necessary, supplement them. It seeks to provide for the socially minded leaders and members of all these agencies a channel of fellowship and expression, and a means to help augment the influence of these groups toward a more cooperative world order.

"The Christian Cooperative Fellowship has no organic relationship to the economic cooperatives. It is itself a social and spiritual cooperative. It desires, however, to work with and

to supplement the economic cooperatives in their educational program, with special emphasis upon the Christian implications of the cooperative way of life. It seeks to work with and through the cooperatives everywhere, as far as possible, in the achievement of a new world order. This will be done not only by promoting membership in the cooperatives from among members of the churches, but also by enlisting them in a thorough program of social education and active participation in building the movement."

The plan was to organize members into local fellowships with their own officers and programs of activities "in general harmony with the National Fellowship." District and regional conferences were to be set up for either annual or biennial meetings and a periodical meeting was planned for the parent body, to form committees and elect officers for purposes of supervision. Among the specific aims announced were:

1. Encourage the formation of local fellowship groups in churches, neighborhoods, communities and cities, providing them help and resources for carrying out the objectives of the Fellowship.

2. Produce, and encourage the production by other agencies of leaflets, pamphlets, study units, books, a magazine, and other literature as required for the extension of this movement.

3. Stimulate the inclusion of courses or emphases upon the cooperative movement in the basic curricula of religious education of the churches, and in conventions, conferences, seminars, or other meetings sponsored by local denominational and interdenominational groups or agencies.

4. Cooperate with local groups in holding social action conferences, seminars, folk schools, and other means for the release of true religion in the redemption of American community life.

5. Counsel with denominational and interdenominational boards or agencies already having Social Service Departments or committees, with a view to developing the cooperative ideal in their program.

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6. Form a basis of understanding between the various denominational and interdenominational agencies on the one hand, and such organizations as the Cooperative League, the Public Ownership League, Credit Union National Association, farm, labor and professional organizations, and other social and economic groups which are seeking to establish a social order built upon voluntary cooperation.

7. Maintain international contacts with the Kingdom of God Movement in Japan and similar movements existing or to be developed in other countries. Interpret the work of the International Cooperative Alliance as one important means through which the world-wide purposes of this movement may be realized.

NATIONAL PREACHING MISSION

Another phase of religious effort that took place in 1936 was an evangelistic tour in the Fall of 28 cities throughout the United States in which 79 missionaries spoke in a National Preaching Mission organized over a period of two years by the Federal Council of Churches. Increased emphasis was also placed upon Christian social education and Christian social service, not only as a result of Kagawa's visit but because of the effect of the varied activities of the Council's many departments.

BIENNIAL MEETING OF FEDERAL COUNCIL OF CHURCHES

A report to the biennial meeting of the Federal Council of Churches at Asbury Park, Dec. 9-11, stated that "leadership and assistance are being given to follow-up programs in the churches to conserve the spiritual impact of Dr. Kagawa's tour. One- and two-day seminars are being held by a number of councils of churches and ministers' associations throughout the country, emphasizing the religious significance of personal and economic relations and combining sight-seeing trips to cooperatives. Speakers are being used in churches and assemblies and many discussion and study groups are under way in the churches.

A feature of the biennial meeting of the Federal Council was a panel

discussion on Consumers' Cooperation in which church leaders took part, speaking on the results of the expansion of cooperatives in "christianizing the social order." The chairman was Charles Seasholes, pastor of the First Baptist Church, Dayton, Ohio. The speakers were: Dr. James Crain, director of the department of education, Disciples of Christ, Indianapolis; Harold O. Hatcher, research division, Congregational and Christian Council for Social Action, New York City; J. Henry Carpenter, executive secretary of the Brooklyn Church and Mission Federation; the Rev. Leon V. Kofod, pastor of the Woodmere Methodist Episcopal Church, Woodmere, L. I.; Dr. William Lloyd Imes, of St. James Presbyterian Church, New York City; Mrs. Grace Sloan Overton, of Harlan, Ind., National Federation of Church Women, and Wallace J. Campbell, assistant secretary, Cooperative League of the U.S.A.

A weekly bulletin published except during July and August and sent to 400 editors, publication of which had been considered a major activity of the Council throughout its history, achieved a peak distribution in 1936, when its issue of Jan. 18, covering "The Church and the Consumers' Cooperative Movement," reached a circulation of more than 18,000 copies. Its unusual demand received special citation in the report to the biennial meeting. Among the subjects covered in other editions for the year were: "Current Issues and Civil Liberties"; "The Constitution Today"; "The National Conference on the Rural Church"; "The Church in Nazi Germany"; "Religion and Distribution" and "Reviews of Current Pamphlets." The report also noted the rise of "an era of pamphleteering," attributed in part to "a time of crisis and agitation" and to an opinion the sudden "flood of pamphlets" might have been stimulated by "a remarkable spurt of interest in adult education." The department of research and education reported a total of 250 such pamphlets reviewed in two special issues of the *Information Service*, which came out re-

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spectively, Dec. 14, 1935, and Jan. 25, 1936.

CONFERENCE OF INTERDENOMINATIONAL EXECUTIVES

Activities of a new interdenominational group known as The Conference of Interdenominational Executives were also covered in the report to the biennial meeting. This conference came into existence following recommendations at the 1934 biennial meeting that executives of various missionary, church and religious education bodies begin to confer on mutual problems in an effort to bring Protestant work into closer affiliation. Accordingly, through its field department the Federal Council participated in activities of an Inter-Council Field Committee appointed by the conference and taken from the personnel of the following groups: The Federal Council of the Churches of Christ in America; the International Council of Religious Education; the Home Missions Council; the Council of Women for Home Missions; the Foreign Missions Conference of North America; the Council of Church Boards of Education; and the Missionary Education Movement.

STATE ACTIVITIES

The report on state councils stated "the desire for unification of Protestant interdenominational work was manifesting itself by the merging of state councils of churches and state councils of religious education into single state organizations, through which the program of the whole Church might be carried forward." Such mergers were reported for the year in Michigan, Colorado and North Carolina. Other councils already existing, were found in California, where the State Council had been subdivided for the Northern and the Southern Areas; and in the following States: Connecticut, Illinois, Massachusetts, Nebraska, New York, Ohio, Oregon, Pennsylvania and Wisconsin.

CHRISTIAN YOUTH CONFERENCE OF NORTH AMERICA

The Christian Youth Conference of North America, uniting 12 national

Christian youth groups under the slogan "Christian Youth Building a New World," held a convention in June, at Lakeside, Ohio, where more than 1,500 delegates were together for five days discussing their particular problems, with the aid of six delegates from the Federal Council's department of evangelism. The department also sponsored the National Preaching Mission which started Sept. 13 and ended Dec. 9 with a mass meeting at Madison Square Garden, New York City. The other cities visited by the missionaries were Albany, Buffalo, Syracuse and Rochester, N. Y.; Pittsburgh, Kansas City, Detroit, Indianapolis, Atlanta, Birmingham, Louisville, St. Louis, Cleveland, Des Moines, Omaha, Billings, Seattle, Vancouver, Portland, San Francisco, Los Angeles, Dallas, Chicago, Washington, D. C., Raleigh, Philadelphia, and Boston. The average attendance in each city was estimated at more than 100,000. It was reported that most of the cities had laid out an extended program in which local ministers would preach in the period Jan. 3-10, 1937, at daily meetings in individual churches or at union services for nearby congregations.

THE CHURCH AND SOCIAL SERVICE

The first prison chaplain was appointed under a new arrangement with the Federal Bureau of Prisons in 1936 when Wayne L. Hunter was named acting chaplain to the United States Industrial Reformatory at Chillicothe, O. After a brief tour of duty there he was transferred to Alcatraz Prison, San Francisco Bay. Mr. Hunter was sponsored by the Presbyterian Board of Education in conformance with a policy to be adhered to in the naming of other chaplains. Worth M. Tippy, executive secretary of the department of Church and Social Service, visited eight Federal prisons, preaching at Alcatraz and at McNeil Island, Puget Sound, in July. He visited also state prisons in California and Oregon. He reported progress by the Council for the Clinical Training of Theological Students in cooperation with the Federal Coun-

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cil, aiding in the choice of men for internships in mental hospitals. Dr. Tippy also spent ten days in Los Angeles visiting motion picture studios, in connection with a campaign conducted to improve the standards of motion picture production. He also represented the Federal Council at the annual meetings of the United States Chamber of Commerce in Washington and of the National Association of Manufacturers in New York City.

James Myers, industrial secretary, in addition to serving on an advisory committee during the tour of Dr. Kagawa, made a special trip to Arkansas in June to investigate conditions during the cotton choppers' strike. He reported that he helped ministers gather facts and also helped avert a lynching. About 18,000 copies of an edition of the Federal Council's Information Service were sold in which his report on this investigation was published. The biennial meeting heard also that his work and the report had been of influence in focussing public attention on conditions in the Cotton Belt, "and in stimulating state and Federal action toward re-establishment of civil liberties, abolition of alleged peonage, and constructive proposals for solution of the tenancy problem." A fund of several thousand dollars was raised by the Church Emergency Relief Committee of which Mr. Myers was secretary, to help the Delta Cooperative Farm, started in Mississippi by the Southern Tenant Farmers' Union with the leadership of Sherwood Eddy. This was heralded as a progressive step in experimenting with cooperatives. Other emergencies aided occurred in Tampa, Fla., and other places.

Labor leaders were asked to speak in the pulpits of churches at Atlantic City and Tampa during the conventions of the American Federation of Labor. Mr. Myers offered his aid jointly with representatives of the National Catholic Welfare Conference and the Central Conference of American Rabbis in the controversy between the factions of the American Federation of Labor which were divided on the question of in-

dustrial and craft unionism. Mr. Myers was invited as a consultant by ministers and church councils in many strike situations, including those at Reading, Pa., Syracuse, Portland, Norfolk and other communities. The division continued to cooperate with the American Friends Service Committee in raising funds and supervising a program of adult education and community cooperation in the coal fields of Eastern Ohio and Western West Virginia.

MARRIAGE AND THE HOME

L. Foster Wood, secretary of the division on marriage and the home, continued the work of handling correspondence and giving out literature on topics of interest to pastors, educators, students and young folks getting married. In particular the division cooperated with the United Youth Movement and with the Joint Committee on Family and Parent Education of the International Council of Religious Education. Among the contacts with groups made during the year were those with Christian Endeavor Regional Conventions; regional youth conferences of the Northern Baptist Convention; State conferences in New York and New Jersey, meetings at the Yale Divinity School, in high schools, and at Hartford Theological Seminary. Contacts were also made with such older groups as the National Council of Parent Education, the American Social Hygiene Association, the Child Study Association of America, the New York State Conference on Marriage and the Home, the Council for the Clinical Training of Theological Students, the Church Conference of Social Work, and the Round Table Club, of which the membership was composed largely of physicians.

RACE RELATIONS

The department gave aid to the Farmers' Homes Corporation Bill to help landless tenant farmers, because more than three-quarters of Negro farmers were found to be tenants and share-croppers as against 22.4 per cent of whites. The department reported unusual interest among Negro church

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leaders in cooperatives in Gary, Ind.; Pittsburgh and Philadelphia, Pa.; and Kansas City, Mo., so that the department sponsored discussions on cooperatives at three large national conventions of churches interested in Negro problems. The department reported evidence of greater recognition and wider observance of Race Relations Sunday, Feb. 9, than ever before. A special message was published and 40 radio stations used a special radio program. "It is significant," the biennial departmental report stated, "that several cities now report the observance of a Race Relations Week which includes discussions, general publicity in the press, interracial fellowship dinners, local broadcasts and interviews, union services of White and Negro churches, mass meetings, the presentation of dramatic plays, pulpit and choir exchanges in regular services, interracial festivals and the combination of interracial services with Jews and Catholics."

INTERNATIONAL JUSTICE AND GOODWILL

The executive committee of the Federal Council in June endorsed the Inter-American Conference for the Maintenance of Peace that was later held (December) at Buenos Aires, and on Nov. 29 cabled Secretary of State Cordell Hull, extending him the confidence of the Council's leaders and following in the new effort, the first of its kind in history, to unite nations of the Western Hemisphere on a policy of mutual support of peace ideals. "It is our earnest hope that the conference will contribute to the building of a more cooperative world community and that our government will extend this policy of consultation and good neighborliness to all nations." The cable was signed by Dr. Ivan Lee Holt, of St. Louis, retiring president of the council, and Dr. Samuel McCrea Cavert, general secretary.

The department of International Justice of the Council joined with the National Peace Conference, which was organized in December, 1935 by

bringing together 29 peace groups, in making an appeal in the Spring of 1936 to President Roosevelt for a clarification of the Government's policy on armaments, which resulted in an interview on March 13 at the White House on invitation of President Roosevelt to these agencies. The appeal was signed by 500 persons, including college presidents, military leaders, religious leaders and laymen, and was put forth as a protest over increases in the national military and naval budgets. The appeal pointed out the "allotment to both services of huge sums from relief and employment appropriations, conservatively estimated to be approximately \$200,000,000 in the current year," and said for that reason only "part of the story" was told in the regular budget figures. The appeal also affirmed: "The country has not heard whether this armament is predicated upon the policy of again throwing some millions of men across the seas, or whether the policy is to be only one of defense. The country has a right to know, therefore, if so large a part of its regular budget is essential to the protection of our coasts and our boundaries when no such vast precautions have ever been deemed necessary." Although the department sent communications to secretaries of state and city councils of churches, giving facts on naval appropriations and protests came to the Government from numerous sources, the department was obliged to conclude that its "efforts at this point seem to have been of no avail, but the churches are learning how to express themselves in a united voice against policies which they believe to be contributory to war."

Reviewing the position of the department on neutrality the report to the biennial meeting stated "there has been a tendency on the part of some to advocate neutrality legislation from the point of view of irresponsible isolation. The department has been aggressive in its advocacy of adequate neutrality measures, but at the same time has insisted that the United States should cooperate with

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other nations in the strengthening of the agencies and means for the peaceful settlement of international disputes and the prevention of war."

Conferences were held in Pittsburgh on March 31, 1936 and in New York City, on Sept. 21, for editors, secretaries and members of denominational commissions engaged in peace work to lay plans for concerted action. At the closing session of the biennial meeting of the Federal Council at Asbury Park, N. J., in December, a nine-point program to promote world peace was drafted. Mounting arms appropriations were construed as "a denial of the Gospel of peace to which as Christians, we are committed." The nine points were presented to the delegates by Dr. Walter W. Van Kirk, secretary of the council's Department of International Justice and Goodwill, and were approved by the body of delegates. The points were in the form of a new appeal "to the President and to the government of the United States," as follows:

"1. To implement still further its Good Neighbor Policy with regard to the Western Hemisphere and to extend this policy of good neighborliness to all nations, regardless of geographical propinquity.

"2. To exercise moderation with respect to our military establishments, to the end that the influence of the United States may be on the side of peace and not on the side of war.

"3. To accept membership in the World Court and through such action relate our nation in a helpful way to the development of a world community of law and of justice.

"4. To extend the existing neutrality legislation to include an embargo on basic war materials to nations resorting to war, in order to keep the United States from being drawn into war, while at the same time it co-operates with other nations for the preservation of peace.

"5. To work to secure national and international control of the arms traffic.

"6. To extend still further the administration's program of trade agree-

ments and to facilitate through such action the easing of economic tensions throughout the world.

"7. To make clear the fact, by Presidential proclamation or otherwise, that the armed forces of our country are not, under any circumstances, to be employed for the protection of the economic or other material interests of American nationals in other lands.

"8. To take such steps as may be advisable to insure the improvement of American-Japanese relations and, in cooperation with other interested nations, to labor for the restoration of a treaty structure for the Pacific.

"9. To place upon a strictly voluntary basis all military training in civil colleges and universities and to provide for the elimination of all military training in high schools."

LIQUOR AND TEMPERANCE EDUCATION

Recommendations were approved for the re-enforcement of temperance education: also "that exploration be made as to the possibility of taking the profit out of the manufacture and sale of liquor," and "the press of the country be urged to consider the harm done to themselves and their readers by liquor advertising and, together with the radio and screen, be urged to eliminate the emphasis on drinking habits." Finally, "that the Federal Council of the Churches of Christ in America, in the interest of national safety and welfare, most solemnly call upon the people of this land to arouse themselves to the menace of this growing evil and by personal influence, by collective and political action strive for such practical measures of restraint and control as are necessary for the protection of society."

RELATIONS WITH CHURCHES ABROAD

The executive secretary, Henry Smith Leiper, reported the completion of plans for the holding in July and August, 1937, respectively, at Oxford and at Edinburgh, of councils on "life and work" and on "faith and order." The need was sensed because

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of great world unrest and of a feeling of weakness in the Christian Church because of its numerous sects. The church representatives who planned the details of the two council meetings as a two-fold World Conference of more than 80 denominations, said "the world is headed for troublous times and is already in a crisis more serious for the Church than any period since the Mohammedan invasion of Europe."

At Oxford the proposals were to have 300 representatives of virtually every major religious denomination consider problems related "to the Church, State and Society." At Edinburgh the central theme was to be "church unity." Preparatory studies were issued for the use of delegates to the conference in anticipation of the conferences they were to attend. These were in the hands of Dean Willard Sperry of the Divinity School of Harvard University, who was chairman on "faith and order" and Dr. John R. Mott, chairman on "life and work."

MISSIONS

The annual meeting of the Home Missions Council was held in January, 1936 at Washington, D. C. Following it a three-day conference was held on "The Town and Country Church." This was the first such meeting held since 1915. The Council also held under the auspices of its Committee on Town and Country a national conference in cooperation with the Iowa Agricultural Extension Service, at Ames, Ia., Nov. 23-25. Another conference was held the same month in Chicago by the Committee on the City and New Americans, under the auspices of the Chicago Church Federation. A national conference on the City Church was planned for the next annual meeting in January, 1937. William R. King, executive secretary of the Council, was active in connection with the National Preaching Mission, meeting Home Mission executives in 23 of the cities visited. He had charge of the extension program of the Preaching Mission of the Federal Council,

promoting one- and two-day meetings in nearby communities and eight-day missions by local church groups in the weeks following the visit of the missionaries.

The annual observance of a world day of prayer on Feb. 28, was sponsored as usual by the Foreign Missions Conference of North America and the Council of Women for Home Missions. More than 4,000 interdenominational prayer services were held throughout the world.

The work of the Council of Women was extended to 50 areas of the following States: Arizona, Arkansas, California, Connecticut, Delaware, Maryland, Michigan, New Jersey, New York, Oregon, Texas, and Washington. The program included public health, recreation and religious education for children, young people and adults. Employers and communities were found to be cooperating increasingly. Increased appropriations were made to cover new territory, particularly in the area from the Gulf of Mexico to the Great Lakes. Mrs. Kenneth D. Miller was named supervisor of the new area.

NATIONAL CONFERENCE OF JEWS AND CHRISTIANS

The third annual observance of Brotherhood Day was held on Sunday, Feb. 23, in the form of a national radio broadcast under the auspices of the National Conference of Jews and Christians, of an address by President Roosevelt, in which he urged the organizing in every community of neighborhood associations. The President spoke from Hyde Park, following an introduction to the program by former Vice-President Charles G. Dawes from a Chicago radio studio. The program included dramatic sketches based on the contributions of Lord Baltimore and Roger Williams to the cause of religious liberty in the United States.

In part President Roosevelt said: "I like to think of our country as one home in which the interests of each member are bound up with the happiness of all. We ought to know by now that the welfare of your family or mine cannot be bought at the

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sacrifice of our neighbor's family; that our well-being depends, in the long run, upon the well-being of our neighbors."

The 1935 American Hebrew Medal for the Promotion of Better Understanding Between Christian and Jew in America, was presented on April 2 to Roger Williams Straus, co-chairman of the National Conference of Jews and Christians. His citation commended him for his leadership in the Conference, "which is now the outstanding agency for the creation of inter-faith amity."

Three institutes on human relations were conducted through the summer, at Blue Ridge, N. C., Estes Park, Colorado and Appleton, Wis. They were attended by Protestant, Roman Catholic and Jewish leaders in business, education, religion and political life.

The closing six months of 1936 and first half of 1937 were designated by the National Conference of Jews and Christians as Cadman Memorial Year, in honor of Dr. S. Parkes Cadman, who in 1928, with Charles Evans Hughes, signed a letter calling representatives of the three groups to their first conference, thus founding the organization. Dr. Cadman died July 12, 1936, at Plattsburg, N. Y. Dr. Cadman had attended the institute at Blue Ridge.

LOYALTY DAYS

The second annual observance of "Loyalty Days" was conducted Oct. 3-4, under the auspices of the National Committee for Religion and Welfare Recovery, when rabbis and Christian clergymen reported improved attendance at religious services. A public meeting in preparation for the observance was held at Town Hall, New York.

COOPERATIVE EDUCATIONAL STEWARDSHIP CONFERENCE

A report on a survey of the ratio of contributions to religious, educational, medical and philanthropic institutions to the national income, was published late in December by the Religion and Welfare Recovery group, proclaiming "the paramount

necessity of more adequate financial as well as moral and spiritual support" of such activities, because of a discovery that religious and welfare agencies had not been receiving gifts commensurate with the increased revenues of business.

The report covered the findings of a committee following a "Cooperative Educational Stewardship" Conference at New York. It recommended that all citizens consider the possibility of increasing their contributions to charity to "the full 15 per cent of income which the Government exempts from taxation."

The survey was presented by Charles V. Vickrey, president of the Golden Rule Foundation, who based his findings upon an official preliminary report issued by the U. S. Treasury Department, compiled from income tax returns for 1935, and which disclosed that deductible contributions in the years after 1916 for which accurate figures were available had not been as high as 3 per cent. Mr. Vickrey's findings were that "in spite of returning prosperity the people of the United States last year registered the lowest percentage of giving" to these institutions, "that has been recorded in any year since 1925," according to the report.

CAMPAIGN FOR PEACE

A campaign for peace was launched in April by a committee of the National Peace Conference. The emergency committee was one of seven new groups having representation in the conference in 1936. During the year the Intercollegiate Council on International Cooperation merged with the National Student Federation, wiping out one of the original groups. Cooperating with the conference and the emergency committee in 1936 were the Connecticut Council on International Relations; New Jersey Committee on the Cause and Cure of War; New Jersey Joint Council on International Relations and the Rhode Island Council for Peace Action.

About 300 speakers were heard in 278 cities throughout the country headed by George Lansbury, labor

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leader of Great Britain. The campaign for the year was closed on Armistice day with a mass meeting at night in Madison Square Garden, New York City, and addresses by Norman Thomas, Senator Gerald P. Nye and others. The campaign was called "the most ambitious program for peace ever attempted in the United States." Its purposes were "to keep the United States from going to war and to achieve world peace by (1) Strengthening pacific alternatives to armed conflict; (2) Bringing about such political and economic changes as are essential to a just and peaceable world order, and (3) Recruiting and uniting in a dynamic movement all organizations and individuals who are determined not to approve of or participate in war. Additional meetings were planned for 1937.

WORLD ALLIANCE MEETING

A goodwill congress of the World Alliance for International Friendship Through the Churches (and the Church Peace Union), held Nov. 7-11 at Denver, Col., reported an average attendance of 500 at their sessions.

Cooperating groups were the Colorado State Conference on the Cause and Cure of War, the Commission on International Justice and Goodwill of the Federal Council of Churches and the League of Nations Association. With the exception of the Colorado body, all were represented in the National Peace group. Eighty-five meetings preceded the holding of the Denver congress. The tenth annual exchange of pulpits under auspices of the Alliance and a committee in Toronto, Canada, was held Sunday, Nov. 15, along the border between Canada and the United States, with about 200 churches participating. The area ran from Calais, Me. and St. Stephens, New Brunswick, to British Columbia, Oregon and Washington. Twelve leading churches of Boston and Montreal had a prominent part in the general exchange. Dr. William P. Merrill, president of the Church Peace Union and of the American Council of the World Alliance, resigned from the Alliance office after serving since the group was organized in August, 1914. He was succeeded by Bishop G. Ashton Oldham of the Protestant Episcopal Church.

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By CHARLES A. McMAHON

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GENERAL

Both within and outside of the United States there transpired during the year events of great interest and import not only to the members of the Catholic Church but to those who, while they do not recognize her spiritual authority, nevertheless follow the pronouncements of her Supreme Pontiff and her other duly authorized teachers, often corresponding actively to their appeal as they concern the moral, educational and civic interests of society. In the following paragraphs will be briefly mentioned some of the notable events which concerned first the life of the Church in the United States and secondly its interests and activities in other countries.

AMERICAN VISIT OF CARDINAL PACELLI

The first visit ever paid to this country by a Cardinal Secretary of State; the special laudation of the American Hierarchy in an Encyclical Letter issued by His Holiness Pope Pius XI; the erection of the sixteenth Ecclesiastical Province in the United States, with the elevation of a new Archbishop; the selection of an American cardinal to be the Papal Legate to the forthcoming Thirty-third International Eucharistic Congress in Manila; and the collection of funds for the erection in this country of a seminary for the training of Mexican priests—these are events written large

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in the history of the Catholic Church in the United States during 1936.

The visit of His Eminence Eugenio Cardinal Pacelli, Papal Secretary of State, was notable for many reasons. Not only was it the first time that a Papal Secretary of State had visited the United States, but the visit encompassed a program of activity that was truly phenomenal in its extent. His Eminence was the luncheon guest of President Roosevelt at the latter's Hyde Park home, visited all four of the American Cardinals in their See cities, traveled across the United States and back by airplane. In the month that he was in this country, the Cardinal visited 12 of the 16 Ecclesiastical Provinces, conversed with the Bishops from 15 of these Provinces, and talked with 75 of the American Bishops in all. He also visited virtually every type of religious institution.

CATHOLIC CENSUS OF THE UNITED STATES

The Catholic population of the United States was put at 20,735,189, a gain of 212,136 over the figure of 1935, in *The Official Catholic Directory* for 1936. The number of clergy was reported to be 31,108, or an increase of 858 over the total for 1935. The total number of churches was given as 18,387, representing an increase of 43 for the year. The total number of converts was listed as 63,454, as compared with 63,845 in the 1935 *Directory*.

MOTION PICTURE CRUSADE

Vigilanti Cura, the only Encyclical Letter issued by His Holiness during the year, was addressed to "the Archbishops and Bishops of the United States of America, and to other Ordinaries enjoying peace and communion with the Apostolic See." This Encyclical bestowed high praise on the crusade against immoral motion pictures conducted under the leadership of the American Hierarchy, expressed the Holy Father's wish for its continuance, and called upon the Bishops of the entire world to take similar action, exercising "painstaking vigilance over the motion pictures" for the protection of the morality of the peo-

ple. The Encyclical concluded by outlining a method of procedure in all nations that parallels the steps taken by the American Bishops.

In accordance with the request of the Most Rev. John T. McNicholas, O. P., Chairman of the Episcopal Committee on Motion Pictures, the Legion of Decency pledge was renewed throughout the United States on Sunday, Dec. 13.

Beginning in February, the preparation and circulation of the classified lists of motion pictures issued by the National Legion of Decency was undertaken by the New York Archdiocesan Council, under the chairmanship of former Governor Alfred E. Smith. The same month, in a statement made public in Washington, the Bishops' Committee on Motion Pictures warned against censorship through legislative measures and gave assurance that the Legion of Decency will go on, vigilantly urging the maintenance of an active interest in the moral significance of motion pictures. In July, following the appearance of the Pope's Encyclical *Vigilanti Cura*, Archbishop McNicholas, Chairman of the Bishops' Committee on Motion Pictures, hailed this document as a renewed evidence of the Holy Father's "world vision and unceasing solicitude for souls."

NEW ARCHDIOCESE OF LOS ANGELES

His Excellency the Most Rev. Amleto Giovanni Cicognani, Apostolic Delegate to the United States, officiated at the erection of the Archdiocese of Los Angeles on Dec. 3, when the Most Rev. John J. Cantwell was formally enthroned as Archbishop. With the constitution of the new Ecclesiastical Province of Los Angeles, what was formerly the Diocese of Los Angeles and San Diego became the Archdiocese of Los Angeles and the Diocese of San Diego. These two Sees, together with the Diocese of Monterey-Fresno, which was formerly in the Province of San Francisco, and the Diocese of Tucson, which was formerly part of the Province of Santa Fe, became the Province of Los Angeles. The new Province,

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according to the 1936 *Official Catholic Directory*, has a Catholic population of more than 500,000.

AMERICAN REPRESENTATION AT MANILA EUCHARISTIC CONGRESS

Appointment of His Eminence Dennis Cardinal Dougherty, Archbishop of Philadelphia, as Legate of His Holiness Pope Pius XI to the Thirty-third International Congress to be held at Manila, Feb. 3-7, 1937, was announced in Rome. His Eminence, as Papal Legate, is returning to a territory where he had already rendered brilliant service to the Church, having governed two Sees in the Philippines. A number of pilgrimages to the Manila Eucharistic Congress were preparing to leave from various parts of the United States as the year drew to a close.

NATIONAL CATHOLIC WELFARE CONFERENCE

Papal Commendation.—Pope Pius warmly commended the various activities of the N.C.W.C., especially in the field of Catholic Action and the press, at an audience which he accorded last July to the Apostolic Delegate to the United States, His Excellency the Most Rev. Amleto Giovanni Cicognani.

Sympathy for Spain.—Assembled for their General Meeting at the Catholic University of America in November, the Bishops of the United States extended their "sympathy and comforting encouragement" to the Bishops, priests and faithful of Spain, and, noting that the Bishops of this country have led their flocks in prayer for afflicted Spain, again exhorted the people of the United States "to turn to God in persevering prayer for the liberty of His Church and the deliverance of the Spanish people from the thralldom of forces that are the foes as well of God and of all religion."

Communism and Despotism.—Following this General Meeting, the N.C.W.C. Administrative Board issued a statement calling on all believers in religion to fight the evils of Communism and despotism. "In the world-wide conflict between two

diametrically opposed philosophies of life, the spiritual and the supernatural on the one side, and the materialistic and naturalistic on the other," the statement said, "there is no place for indifference or neutrality." "To remain indifferent to what is happening before our very eyes," it added, "is not only blameworthy but criminal, and for Catholics such culpability is doubly grave because they have before them a clear and explicit program of action."

New Members.—Two new members were among those elected by the General Meeting of the Bishops in November to serve on the N.C.W.C. Administrative Board. These new members are the Most Rev. John Gregory Murray, Archbishop of St. Paul, who was formerly a member of the Board, and the Most Rev. John Mark Gannon, Bishop of Erie. The Most Rev. John T. McNicholas, O.P., Archbishop of Cincinnati, and the Most Rev. Hugh C. Boyle, Bishop of Pittsburgh, retired from the Board under a rule limiting the number of consecutive terms a member may serve.

Administrative Board.—The complete N.C.W.C. Administrative Board and the posts to which each was assigned at the organization meeting of the Board follows: The Most Rev. Archbishop Edward Mooney, Bishop of Rochester, Chairman of the Board and Episcopal Chairman of the Executive Department; the Most Rev. John B. Peterson, Bishop of Manchester, Vice Chairman of the Board and Episcopal Chairman of the Department of Education; the Most Rev. Edwin V. O'Hara, Bishop of Great Falls, Secretary of the Board and Episcopal Chairman of the Department of Catholic Action; the Most Rev. Francis C. Kelley, Bishop of Oklahoma City and Tulsa, Treasurer of the Board; the Most Rev. Samuel A. Stritch, Archbishop of Milwaukee, Episcopal Chairman of the Department of Catholic Action Study; the Most Rev. Joseph F. Rummel, Archbishop of New Orleans, Episcopal Chairman of the Legal Department; the Most Rev. John F. Noll, Bishop of Fort Wayne, Episco-

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pal Chairman of the Department of Lay Organizations; Bishop Gannon, Chairman of the Press Department, and the Most Rev. John J. Mitty, Archbishop of San Francisco, Archbishop Murray and Bishop Kelley, Standing Committee on Finance.

MONSIGNOR BURKE

A profound loss to the Church was the death of the Rt. Rev. Msgr. John J. Burke, C.S.P., on Oct. 30. Monsignor Burke had been General Secretary of the National Catholic Welfare Conference from its inception and only a few weeks before his passing, Pope Pius XI had raised him to the rank of Domestic Prelate in recognition of his valued services as General Secretary of the N.C.W.C. and his extraordinary labors for the Church. His Holiness conferred this honor, a rare one for a member of a religious community, at the express request of Archbishop Cicognani. His Excellency officiated at Monsignor Burke's investiture and also at his funeral services in the crypt of the National Shrine of the Immaculate Conception on the campus of the Catholic University of America.

The Administrative Board, at its November organization meeting, appointed the Very Rev. Msgr. Michael J. Ready to be General Secretary of the N.C.W.C. in succession to the late Monsignor Burke. Monsignor Ready, a priest of the Diocese of Cleveland, familiar with all sections of the country and himself well known throughout the United States, had served as Assistant General Secretary for five and a half years.

DIOCESAN CHANGES

One new Archbishop was created, eight priests were elevated to the Episcopacy, four Bishops took new offices and three Bishops died in the United States during the year 1936.

The Most Rev. John J. Cantwell, Bishop of Los Angeles and San Diego, was created Archbishop of the newly-constituted Archdiocese of Los Angeles. The newly named members of the Episcopacy are: the Most Rev. Joseph M. Gilmore, Bishop of Helena; the Most Rev. William L. Adrian,

Bishop of Nashville; the Most Rev. R. T. Guilfoyle, Bishop of Altoona; the Most Rev. Charles F. Buddy, Bishop of the newly-erected Diocese of San Diego; the Most Rev. Francis J. Monaghan, Coadjutor Bishop of Ogdensburg; the Most Rev. M. S. Garriga, Coadjutor Bishop of Corpus Christi; the Most Rev. Hugh L. Lamb, Auxiliary Bishop of Philadelphia; the Most Rev. Thomas Megan, S.V.D., Prefect Apostolic of the newly created Prefecture Apostolic of Hwaikingfu, Honan, China.

The Most Rev. Joseph C. Plagens, formerly Auxiliary Bishop of Detroit, became Bishop of Marquette. The Most Rev. Gerald P. O'Hara, formerly Auxiliary Bishop of Philadelphia, became Bishop of Savannah. The Most Rev. George L. Leech, formerly Auxiliary Bishop of Harrisburg, was installed as Bishop of that See in January. The Most Rev. James E. Walsh, M.M., formerly Vicar Apostolic of Kongmoon, South China, became Superior General of the Catholic Foreign Mission Society of America with headquarters at Maryknoll.

The Most Rev. James A. Walsh, M.M., Titular Bishop of Siena and Superior General and Co-Founder of the Catholic Foreign Mission Society of America, died April 14. The Most Rev. John J. McCort, Bishop of Altoona, died on April 21. The Most Rev. William Turner, Bishop of Buffalo, died on July 10.

CATHOLIC EDUCATION

The Rt. Rev. Msgr. Joseph M. Corrigan, noted educator and Rector of the Theological Seminary of St. Charles Borromeo, Overbrook, Philadelphia, was named Rector of the Catholic University of America, Washington, D. C., the announcement being made by the Most Rev. Michael J. Curley, Archbishop of Baltimore and Chancellor of the University on April 2. Installation ceremonies were held on Nov. 18.

The Rt. Rev. Msgr. Patrick J. McCormick was named Vice Rector of the Catholic University.

A total of 2,605,500 students were enrolled in Catholic educational institutions in September. The number

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of teachers in these institutions was 86,200. The total number of Catholic schools was 10,520. It was computed that 68,800 students received diplomas from Catholic high schools and colleges throughout the United States last June.

Attempts at Federal control of education were condemned in a statement issued at the 33d annual meeting of the National Catholic Educational Association. Warning was issued at this meeting that certain world leaders would make of youth "perpetuators of a godless social order." Warning also was sounded that compulsory oaths of allegiance for teachers may lead to a "State monopoly of schools and an education based on political indoctrination."

Constant efforts to enlighten the public on the Catholic attitude concerning State aid of schools was pledged by members of the Department of Superintendents, National Catholic Educational Association, at the 19th semi-annual meeting held in Washington. The resolution on this point declared that the country's citizens have seemed to miss the distinction between "pupil aid" and "school aid" in the matter of finance "where the children attending Catholic schools are concerned, although transportation in some States and textbooks and welfare boards in others have been provided for years."

An appeal for "just treatment of the Catholic educational system in Ohio" was made by Archbishop McNicholas, of Cincinnati, in an address at graduation exercises for Catholic high schools of Hamilton County, O. The Archbishop blamed the continuance of "this unjust treatment of Catholic schools on ministers of religion and three types of politicians." There are, the Archbishop said, four types of politicians—"the gangster politician, the hireling politician, the routing politician and the honest and constructive politician, who deserves to be called a patriot."

The Supreme Court of North Dakota ruled that Catholic Sisters who meet the professional qualifications for the position may be employed in the common schools of that

State, even though they wear the garb of their religious Orders and contribute part of their salaries for the support of their motherhouses. In Iowa, a ruling by the Attorney General decided that parochial school children have equal right with the pupils of public schools to bus transportation provided by public authorities. The Keely-McCreery amendment to the New York Education Law making public bus transportation available to parochial as well as public school pupils was signed by Governor Herbert Lehman in May. City Counselor Wayman of St. Louis ruled in September that parochial school students have the same right to the services of the municipal department of health as have the children attending public schools.

ACTIVITIES OF THE APOSTOLIC DELEGATE

In addition to participating in numerous ecclesiastical ceremonies and celebrations in various parts of the country, Archbishop Cicognani, the Apostolic Delegate, delivered several ringing messages to the Catholics in the United States.

Particularly notable among them were his addresses to the national convention of the Holy Name Society in New York, and to the National Catechetical Congress in that same city. In the former he urged that the Catholic Action of the Society be dedicated to the poor and lowly who are "marked by the stigmata of suffering and of spiritual and material need." In the latter he said ignorance of the things of God is "fatal for the individual and for society."

His Excellency also issued a call for a great crusade of prayer "for the sake of a distressed and turbulent world" and a plea for cooperation with the work of the Gospel, the teaching and fostering of love for the Catechism, in an address broadcast from Washington to the convention of the National Council of Catholic Women in Galveston, Tex., on Oct. 19. When St. John's University, Brooklyn, conferred the honorary degree Doctor of Laws upon him on April 25, His Ex-

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cellency pointed out that "it is by the practice of virtue that the cultivated man completes his education and becomes at the same time an apostle of science."

CATHOLIC FIELD MEETINGS

The National Catholic Rural Life Conference, conducting a highly successful four-day meeting at North Dakota Agricultural College, Fargo, N. D., adopted resolutions laying the present social and economic disorders at the door of materialistic philosophy, furthered by anti-Christian teachings.

Four Bishops, an Archabbot and some 300 priests joined with 100,000 Catholic laymen in Eucharistic Day services in Pittsburgh, when the huge Pitt Stadium was turned into a vast outdoor cathedral. That same day, in Cincinnati, some 55,000 men of the Archdiocese of Cincinnati marched in procession to Crosley Field, where they renewed their Holy Name pledge in a great demonstration offered in reparation for the acts of irreligion committed in Spain, Mexico and Russia and also "for the domestic sins of social injustice."

Ten thousand people thronged Swayne Field in Toledo for a solemn Field Mass, part of the ceremonies commemorating the Silver Jubilee of the Diocese of Toledo.

On the first anniversary of the Seventh National Eucharistic Congress in Cleveland, the first Cleveland Diocesan Congress was held in the city of Youngstown, Ohio.

OBSERVANCE OF POPE'S BIRTHDAY

Catholics throughout the United States joined wholeheartedly in the observance of Pope Pius XI's seventyninth birthday and his entrance upon his eightieth year on May 31. Particularly impressive among the tributes on this occasion were addresses delivered by Cardinal O'Connell and Cardinal Hayes over nation-wide radio hook-ups. Cardinal O'Connell said peace and amity would return to the world if the nations' rulers "would but listen to the Pontiff." Cardinal Hayes acclaimed Pope Pius as one whose presence in the Vatican

"assures us against disaster, from the destructive elements of religious strife, or social disorder."

PRAYERS FOR POPE'S RECOVERY

Towards the close of the year, in thousands of churches in all dioceses throughout the country, prayers ascended to Heaven for the recovery of His Holiness from the illness he suffered. In a number of places, clergymen in non-Catholic churches either called upon their congregations for prayers for the Pope's recovery or paid tributes to the Pontiff.

CATECHETICAL CONGRESS

The Catechetical Congress in New York, conducted by the Bishops' Committee, was a brilliant success. More than 3,000 delegates from all parts of the country attended and addresses were delivered by a brilliant company of speakers, including His Eminence Patrick Cardinal Hayes, Archbishop of New York, and the Apostolic Delegate. Nineteen members of the Hierarchy attended. One of the important developments of the Catechetical Congress was the formation of Catholic Biblical Association of America devoted to the work, now under way, of revising the language of the Douai-Rheims English New Testament.

MISSION AND RELIEF WORK

A letter from the Consistorial Congregation in Rome, which highly praised the Episcopate in this country for their work among Negroes and urged them to intensify it more and more, focuses attention upon the steady growth of mission work in the United States observed in 1936.

The 31st annual meeting of the Catholic Church Extension Society, held at Chicago and attended by 55 members of the Hierarchy, brought the announcement that the receipts of the Society in 1936 returned to the \$1,000,000 mark, the figure reached before the depression. This sum included \$500,000 disbursed to home missions in the United States between Oct. 1, 1935, and Sept. 30, 1936. The Most Rev. William D. O'Brien, Auxiliary Bishop of Chicago, was ap-

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pointed to his third term as President of the Society.

The National Office of the Society for the Propagation of the Faith announced from New York last June that it has set \$2,000,000 a year as its goal for the annual offering of American Catholics.

Catholic priests and religious continued to volunteer in large numbers for mission work at home and abroad.

The annual report of the Superior Council of the United States, Society of St. Vincent de Paul, showed a total of \$5,797,060.19 expended by that organization for the relief of the needy over a 12-month period. The Society gave assistance to 115,966 families, representing 560,538 individual persons, throughout the United States. The Society's members made 1,129,033 visits to families and 80,372 visits to institutions.

CAMPAIGN FOR STATUE OF CHRIST

Under the sponsorship of the Most Rev. John F. Noll, Bishop of Fort Wayne, there was inaugurated a national campaign for the erection of a statue of Christ in the National Capital. The statue, it was announced, is to be of heroic size and is to be symbolical of the desire of the American people to remain steadfast to the Christian principles upon which the nation was founded instead of surrendering to radicalism.

CATHOLIC PRESS

The year was a signal one for the Catholic Press in the United States. Catholic publications generally enjoyed steady, vigorous growth; the Catholic Press Association of the United States observed its silver jubilee and received the warm commendation and hearty encouragement of the Holy Father and of the Bishops of the United States assembled in their General Meeting; the Catholic Press of the United States sent to the World Catholic Press Exposition held at the Vatican an exhibit which, for its color, orderliness and impressive message, elicited the high praise of visitors to the exhibition.

INDUSTRIAL CONFERENCE

The Catholic Conference on Industrial Problems held seven meetings at Philadelphia, Washington, Schenectady, Chicago, Cincinnati, San Francisco and Rochester. These included six regional conferences and a special meeting on "The Negro in Industry." The conferences were held to discuss industrial facts, legislation and proposals in the light of the Papal Encyclicals. Attendance was larger than in 1935. These meetings, which are a combination of public forum and a school of Catholic social teaching, reach, through their sessions and their publicity, a very large section of the people.

INTERNATIONAL PROBLEMS

The Catholic Association for International Peace carried forward its program of education on the Catholic principles underlying past and current international problems. The Conferences held included the Annual Meeting in Washington, D. C., during Easter Week, and four Student Peace Conferences at as many Catholic colleges. At one of these, that of Rosary College, River Forest, Ill., Mrs. Franklin D. Roosevelt addressed a group of 1,500 students and faculty representatives. Three pamphlets—"Peace Action of Benedict XV," "The United States and the Dominican Republic" and "An Introduction to Mexico"—were published. Under the auspices of the Association, an edition of John Eppstein's *The Catholic Tradition of the Law of Nations* was prepared. Translations of several works, including Mueller's volume on *The Peace Efforts of the Church During the Last Three Centuries*, were made by the Association. The creation and extension of study clubs on international problems in universities, colleges, Newman Clubs and lay organizations was one of the body's main interests. The Association also aided considerably in the formation of the Catholic Students' Peace Federation, formed to coordinate and stimulate the Peace groups in Catholic universities and colleges throughout the country.

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NATIONAL COUNCIL OF CATHOLIC WOMEN

The National Council of Catholic Women is now organized in 56 Archdioceses and Dioceses. Councils were organized in the Archdiocese of New Orleans and the Dioceses of Lafayette and Amarillo in 1936. Other affiliations of the N.C.C.W. include 18 national, six state and 2,300 local organizations. The National Council of Catholic Men, at the close of the fiscal year on July 31, had a total of 1,057 affiliations throughout the country, consisting of eight national organizations, 395 parish councils, 330 Knights of Columbus Councils, 177 Holy Name Societies, and 147 other local organizations.

ANNIVERSARY OBSERVANCES

By means of the press and radio, in conferences and public assemblies, in prayer and action, the forty-fifth anniversary of Pope Leo XIII's Encyclical *Rerum Novarum* and the fifth anniversary of Pope Pius XI's Encyclical *Quadragesimo Anno* were observed jointly in the United States on May 15.

Major Catholic celebrations, culminating in a great Pontifical Military Field Mass at Dallas on Oct. 11, attended the Texas Centennial celebration. A Field Mass on the San Jacinto Battlefield, April 21, was the most impressive of many celebrations held that day to commemorate the centennial of the freedom of Texas. The Tercentenary of the founding of Rhode Island and Providence Plantations was observed in 1936, and on June 7, Masses of Thanksgiving were celebrated in every parish church and convent chapel in the Diocese of Providence in gratitude for the progress of the Catholic Church in Rhode Island.

The Apostolic Delegate presided at impressive ceremonies held in New York on March 8 to commemorate the 360th anniversary of the Papal Bull *Salvatore* conferring signal honors on St. Thomas Aquinas. June 25 was the centenary of the ordination of the Venerable John Nepomucene Neumann, C.S.S.R., fourth Bishop of Philadelphia, whose virtues were sol-

emnly declared heroic by Pope Benedict XV on Dec. 11, 1921.

The Rev. John J. Wynne, S.J., author, educator and scholar, observed the 60th anniversary of his entrance into the Society of Jesus on Dec. 8. The Rev. Edward A. Duff, Captain and Chief of Chaplains in the United States Navy, observed the 25th anniversary of his ordination on June 21.

President Roosevelt sent a message of felicitation on the occasion of the 100th anniversary of the establishment of the Ancient Order of Hibernians on May 2. Praising the contributions made to this country by persons of Irish blood, the President said that "in peace and in war they have been in the forefront of all activity."

CONVENTIONS AND CONFERENCES

The Knights of Columbus, whose membership totaled 442,029 on June 30, at its 54th annual supreme convention in Toronto last August pledged to continue their efforts in behalf of the persecuted people of Mexico. A two-day conference called by the Slovak League of America and held in Washington in July resulted in the formation of the National Federation of Slovak fraternal organizations with a combined membership of 650,000 and assets of \$40,000,000. Joseph G. Prusa, of Passaic, N. J., Supreme Secretary of the Slovak Catholic Sokol, was unanimously elected head of the new Federation. The Most Rev. John J. Mitty, Archbishop of San Francisco, accepted the presidency of the Chaplains' Aid Association, succeeding the late Monsignor John J. Burke, C.S.P., founder and president of the Association from 1917 until his death on Oct. 30. Frank C. Blied of Wisconsin was elected President of the Catholic Central Verein of America. Leo Cunningham of San Francisco was chosen president of the National Laymen's Retreat Conference.

The "Catholic Hour," produced by the National Council of Catholic Men, was being broadcast by 57 radio stations in 37 States and the District of Columbia.

A Pacific Coast Conference of the

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Catholic Youth Organization was formed last summer. In January, Cardinal Hayes announced the reorganization of an important part of the recreational work for youth in the Archdiocese of New York, with the incorporation of a body to be known as the "Catholic Youth Association" to absorb the activities and personnel of the Catholic Boys' Club. Catholic Boy Scouts throughout the nation joined on Feb. 9 in the observance of Scout Sunday, with ceremonies, chiefly religious, commemorating the silver jubilee of Scouting.

An Association of Catholic Prison Chaplains was formed in October, following the first Institute for Prison Chaplains, sponsored by the Catholic University of America.

SCIENTIFIC ACTIVITIES

Georgetown University joined with the National Geographic Society in an expedition which went to Soviet Russia to photograph the total eclipse of the sun on June 19. A discovery which may prove of great value in the eventual solution of the cancer problem was announced in June by the Institutum Divi Thomae of Cincinnati, a scientific research school established by Archbishop McNicholas. In November there was announced a discovery by two Fordham University professors which may lead to the establishment in the near future of a new practical method for the resuscitation of victims of industrial electrocution.

With the reformation of the Pontifical Academy of Science through the *Motu Proprio In Multis Solaciis*, in October, Pope Pius XI included six distinguished American scientists among the 70 renowned personages whom he personally nominated to membership in the Academy. The American scientists so honored are: George David Birkhoff, Professor of Mathematics at Harvard University; Dr. Alexis Carrel, Professor of Biology in the Rockefeller Institute, New York; Robert Andrews Millikan, Director of the Physics Laboratory of the California Institute of Technology; Thomas Hunt Morgan, Head of the Department of Biology at the

California Institute of Technology; George Speri Sperti, Director of the Institutum Divi Thomae of Cincinnati, and Hugh Stott Taylor, Professor of Chemistry at Princeton University.

CATHOLIC VISITORS TO THE UNITED STATES

Distinguished Catholic visitors to the United States in 1936 included His Eminence Manuel Cardinal Goncalves Cerejeira, Patriarch of Lisbon, Portugal, who came to the United States to take part in the observance in California of the 600th anniversary of the death of St. Elizabeth, Queen of Portugal, and who was received enthusiastically in many cities throughout the United States; the Most Rev. Giuseppe Fietta, Papal Nuncio to Argentina; the Most Rev. Giovanni Panico, Apostolic Delegate to Australia; the Most Rev. Arsene Turquetil, O.M.I., Vicar Apostolic of Hudson Bay and called by the Holy Father "The Bishop of the North Pole"; the Rt. Rev. Wulstan Knowles, O.S.B., Abbot of the Monastery of Fort Augustus, Scotland; the Very Rev. Dr. James O'Mahoney, O.M. Cap., noted Irish educator, lecturer and author, and the Most Rev. Raphael M. Baldini, O.S.M., Prior General of the Servite Order, who came to the United States to attend the Triennial Chapter of the American Province of the Servite Fathers, held in Chicago.

THE HOLY FATHER

Entering upon the 15th year of his pontificate and the 80th of his life, His Holiness, Pope Pius XI, exhibited throughout the year the same vigor and activity which have caused the whole world to marvel. His heroic broadcast from a sick bed of a peace message to the world at Christmas-time evoked admiring comment everywhere and caused the entire Catholic world and many others to join in prayers for His Holiness' recovery.

THE SACRED COLLEGE

The necessity of prayer was specially stressed by Pope Pius in the course of the year. In two important discourses he asserted that never was prayer needed as much as it is today. In

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September, His Holiness called for a crusade of prayer throughout the world, in which the faithful were to pray particularly for Spain. His Holiness selected as the intention for which priests are to offer one of their three Masses on All Souls' Day the souls of all who had died in the civil war in Spain.

In a discourse broadcast by radio to a large part of the world on Sept. 14, when he received some 600 Spanish refugees in audience at Castelgandolfo, His Holiness said there were many serious lessons to be learned from the tragic events taking place in the world. The very foundations of all order, all culture and all civilization are being threatened and the hatred of the destructive forces is being directed particularly against the Catholic Church, because the one and only real obstacle to the work of destruction is Christian teaching and the Church of Our Lord Jesus Christ, Pope Pius declared.

The Holy Father spoke often and vigorously against the menace of Communism. Receiving a group of Hungarian pilgrims headed by Cardinal Seredi on May 11, he drew a lamentable resemblance between the Ottoman invasion of Europe more than two centuries ago and the threat of Communism today. His Holiness made his address at the solemn inauguration of the World Catholic Press Exposition on May 12, a clarion warning and call to action by all the peoples of the world against Godless Communism. Receiving 10,000 representatives of Catholic Action from 22 countries in June, Pope Pius exhorted those who labor in the cause of Catholic Action to be ever vigilant and to combat the menace of Communism everywhere in civil society.

The close of the year saw 66 Cardinals in the Sacred College, a total four short of its complement.

Two new Cardinals were created and proclaimed in 1936. They are His Eminence Giovanni Cardinal Mercati and His Eminence Eugenio Cardinal Tisserant, Prefect and Pro-Prefect of the Vatican Library, who were elevated in June.

Four members of the Sacred College died during the year. His Eminence

Luigi Cardinal Sincero, Secretary of the Sacred Congregation for the Oriental Church, died on Feb. 7; His Eminence Alexis Henry Cardinal Lepicier, O.S.M., Prefect of the Sacred Congregation of Religious, on May 20; His Eminence Henri Charles Cardinal Binet, Archbishop of Besançon, July 15, and His Eminence Louis Joseph Cardinal Maurin, Archbishop of Lyons, on Nov. 16.

CHURCH PERSECUTIONS

Persecutions of the Church brought the saddest notes of the year, with the furious destruction of churches and the slaughter of priests and religious in Spain horrifying the whole world. The relentless prescription of the Church and its activities continued in Germany, while, despite numerous reports of its improvement, the plight of the Church in Mexico was worsened, if anything, in the course of 1936.

MISSIONS ABROAD

World-wide contributions to the work of the Pontifical Society for the Propagation of the Faith reported in May totalled approximately \$3,360,000, while the donations to the work of the Pontifical Society of St. Peter the Apostle for Native Clergy amounted to approximately \$720,000. It was reported that 15,168 native students are preparing for the priesthood in 340 seminaries in China, India, Japan, Indo-China, Africa and other sections.

FOREIGN RELATIONS AND DEVELOPMENTS

Italy.—The furtherance of the cordial relations existing between the Holy See and Italy was signalized by two striking events. One of these was the special emphasis which Premier Benito Mussolini put upon these good relations in his review of the last 10 years. The second was the Premier's personal inauguration of the work that will provide a magnificent new approach from Italian territory to St. Peter's Square and the territory of Vatican City.

Germany.—The year served only to intensify the grave difficulties confronting the Catholic Church in Germany. A new campaign was launched

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against the Church through the so-called immorality trials in which it was sought to involve groups of Catholic religious. These trials were a complete fiasco and had no effect whatever in weakening the loyalty of German Catholics. It was estimated in 1936 that a total of \$5,000,000 had been levied against Catholic religious in Germany for so-called infractions of the currency laws.

Mexico.—Throughout much of the year there were numerous reports of the relaxation of the religious laws in Mexico and assertions that all of the churches would be opened for worship. These reports proved greatly misleading. The end of the year saw the Bishops of Mexico without any knowledge of a plan to open all the country's churches, and aside from the fact that only about 100 churches in the 33 dioceses and one Vicariate Apostolic were reopened for worship in the course of the year, there was no evidence at all of any relaxation of the restrictive measures. As a matter of fact, the persecution was intensified in some quarters, notably in Morelia. In Chihuahua, the number of priests permitted in the entire State was reduced to one. The year saw the Mexican Bishops issuing fresh warnings to their people, particularly against the dangers of Socialistic education; assailing immoral customs and books, encouraging their people in their steadfast loyalty and pleading for prayers.

Canada.—In Canada, where Catholics were shown in 1936 to total 4,285,388 out of a total population of 10,376,786, and were the largest single religious body by far, the Holy See erected a new Ecclesiastical Province—that of Moncton. The new Province is composed of the Archdiocese of Moncton and two suffragan Sees—the Dioceses of Chatham and of St. John, N. B. A new diocese, that of Nelson, British Columbia, also was erected.

England.—The *Catholic Directory*, appearing early in 1936, listed the Catholic population of England at 2,335,890, but Monsignor Arthur Jackman, formerly secretary to the late Cardinal Bourne, declared that this

was much below the actual figure. In the crisis which preceded the abdication of King Edward VIII on December 10, the Most Rev. Arthur Hinsley, Archbishop of Westminster, urged united prayer for the King and country "during these anxious times." When, in July, an unsuccessful attempt was made on the life of King Edward VIII, Cardinal Pacelli, acting in the name of the Holy Father, congratulated the King on his escape from the grave danger.

England was bereaved early in the year when King George V died at midnight of Jan. 20. His Majesty had endeared himself to the Catholics of his realm by his refusal, 25 years before, to take the traditional coronation oath which marked out Catholics for particular attack.

The Holy Father named Archbishop Hinsley President of the National Board of Catholic Action of England and Wales, and organization of Catholic Action plans was announced by Archbishop Hinsley in November and the Hierarchy of England and Wales issued a joint pastoral on this subject for Advent.

Ireland.—One of the most significant developments in Ireland was the finding by an impartial, unofficial investigating group that the policy of the Northern Ireland Unionist Government "has resulted in the inflammation of religious bigotry and the aggravation of sectarian differences among the North Irish community." The findings of this body were brought to the attention of the Parliament in London. About the time the findings of the investigating body were made public Catholic youths were attacked in a brief disturbance in Fintona, County Tyrone, which followed an Orangeman's harangue to a meeting, in which he called for a boycott of Catholics. Preliminary reports on the census taken last April revealed a disturbing decrease in the population of the Irish Free State. The population had decreased from 2,971,992 to 2,965,854 between 1926 and 1936, it was indicated. The decrease has been attributed partly to

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emigration and partly to late marriages.

Scotland.—Some 60,000 members of the Ancient Order of Hibernians in Scotland and their friends made a pilgrimage one Sunday in September in reparation for the outrages committed against the Blessed Sacrament and the Church by the Leftists in Spain. Earlier in the day, some 40,000 received Holy Communion for the same intention.

France.—The French Cardinals felt it necessary, towards the close of the year, to issue a joint pastoral warning of the dangers facing France and declaring that salvation lies in the return to Christian order. In the fact of the social conflict that beset France in 1936, the Bureau of the French Confederation of Christian Workers, meeting in Paris, clarified the position of Christian labor unions. Affirming their support of social reforms, and naming them, the Christian Workers emphasized the fact that these measures must be applied in a spirit of collaboration and not of conflict. When the secretaries of the Communist Party in the region of the Nord addressed to His Eminence Achille Cardinal Lienart, Bishop of Lille, an open letter protesting against recent statements of the Cardinal strongly denouncing the Communist menace, the Cardinal replied publicly, turning many of the Communists' own arguments against them.

Belgium.—Honors such as few Belgians have ever received were paid the remains of Father Damien, Apostle of the Leper Colony at Molokai, Hawaiian Islands, when his body was brought back to his native Belgium for permanent burial early this summer. King Leopold III led an enormous outpouring of the people when a most impressive welcome was accorded the humble priest's remains upon their arrival at Antwerp. Archbishop Clemente Micara, Papal Nuncio to Belgium, and Dave Hennen Morris, United States Ambassador to Belgium, were among those to take part in the ceremonies. King Leopold headed the national committee making arrangements for the

reception ceremony. His Eminence Joseph Cardinal Van Roey, Archbishop of Malines, was honorary president. The Papal Nuncio and Ambassador Morris were vice-chairmen. The great Congress of Malines, called for the purpose of instructing Belgian Catholics concerning the religious, economic and social problems of the present times, saw 200,000 persons taking part in its closing ceremonies.

Austria.—The application of the Concordat concluded between the Holy See and Austria reached a decisive stage. The Austrian Government, for important reasons which the Episcopate conceded to be justified, set about the formation of a Government organization of youth. It was understood, as negotiations moved forward, that the National League of Catholic Male Youth and the National Union of Catholic Girl Associations, numbering together about 100,000 members, will not be called upon to renounce their particular task of giving a Catholic education if they join a Government organization. Austria observed with impressive ceremonies the second anniversary of the proclamation by the late Chancellor Dollfuss of the new Austrian Constitution which has made it its task to organize the state and society in accordance with the principles of the Papal Encyclical *Quadragesimo Anno*.

Switzerland.—The *Year Book* of the International Labor Office at Geneva, Switzerland, devoted considerable space to the teachings of the Catholic Church and events in the life of the Church, making particular mention of the Encyclical of His Holiness Pope Pius XI on the Holy Priesthood. Special mention is also made of the work of the National Catholic Welfare Conference in the United States. Councillor Motta, a Catholic and former President of Switzerland, had a prominent part in the opposition which led to the failure of a bill in the Swiss National Council which would have restored diplomatic relations with Soviet Russia.

Holland.—The Hierarchy of Holland condemned twice the Mussert

THE ROMAN CATHOLIC CHURCH

Movement which functions in Holland along the lines of the Nazi Movement in Germany. The Bishops' condemnations created a considerable stir throughout the country. A joint Pastoral issued by the Netherlands Hierarchy later in the year directed the attention of the faithful to a union of Catholic leaders formed in opposition to all modern atheism. There are 34 Catholic dailies in Holland, which has a Catholic population of 3,000,000, it was shown in that country's exhibit at the Vatican World Catholic Press Exposition.

Finland.—Catholics in Finland increased from 600 to 1,700 between 1920 and the beginning of 1936. This period embraces the era of full religious freedom during which time the country has had a Vicar Apostolic.

Czechoslovakia.—Towards the close of the year, the Foreign Minister speaking on the *Modus Vivendi* between that country and the Holy See, said that certain obstacles had arisen to delay the promulgation of the Papal Bull relating to the boundaries of the Slovakian dioceses and the status of ecclesiastical properties in Slovakia, but that the Government was doing its utmost to comply with all wishes expressed in that connection by Vatican organs. At the beginning of 1936, a survey by the Department of Statistics showed that out of 1,799,004 pupils in the elementary schools of the Republic, 1,414,641, or 80 per cent, were Catholics.

Lithuania.—Organization of Catholic Action in Lithuania to correspond as far as possible to the organization of the National Catholic Welfare Conference in the United States was to be his recommendation on his return to that country, the Most Rev. Theofil Matulionis, Apostolic Administrator of Leningrad, said at the conclusion of a visit to America.

Hungary.—The selection of Budapest to be the scene of the 34th International Eucharistic Congress in May, 1938, and the visit paid by Admiral Nicholas Horthy, its Regent, to the Holy Father were highlights of the year in Hungary.

Albania.—The arrival of a Papal Delegate in Albania in 1936 attested the reestablishment of friendly relations between that country and the Holy See, and Catholics were able to look forward to peace after some years of painful conflict. Catholic schools, closed by King Achmed Zogu's Government, were to be reopened, it was announced.

Jugoslavia.—Catholics of Yugoslavia were keenly disappointed in 1936 by the delay in the conclusion of the Concordat between that country and the Holy See. With the change in Government and the formation of the Stojadinovic Cabinet great hopes were held for the conclusion of this agreement. The text had been completed and awaited only the signatures of Belgrade and Vatican City.

Rumania.—The Rumanian Uniat (Roman Catholic) Church has a total of some 1,600,000 members, statistics reveal. The Rumanian Constitution recognizes two churches—the Rumanian Orthodox Church and the Rumanian Church United with Rome, generally referred to as the Uniat Church.

Palestine.—Christians in Palestine totaled 107,242 out of a total population of 1,263,136, according to 1936 statistics. The remainder was made up of 778,615 Moslems and 366,136 Jews.

Africa.—The year saw a Pontifical Legate go to darkest Africa for the first time in history, when His Eminence Jean Cardinal Verdier, Archbishop of Paris, represented the Pope at the dedication of the new Cathedral at Dakar, in extreme western Africa in Senegal. Numerous conversions continued to be reported from Africa, among the most interesting being that of Ludoviko Ndnwunke, uncle of the King of Urundi, Belgian Congo, who chose a former rival to act as his godfather at his Baptism, thus signaling the end of a long feud. The *Year-Book of Catholic Missions* in the Belgian Congo reported early in 1936 that there were 1,232,018 Catholics in that area and that 1,032,660 natives were being prepared for Bap-

tism. The Second Plenary Conference of the Ordinaries under the jurisdiction of the Apostolic Delegation in Leopoldville, Belgian Congo, Central Africa, was opened with a radio message from His Eminence Pietro Cardinal Fumasoni-Biondi, Prefect of the Sacred Congregation for the Propagation of the Faith. There are 412,970 Catholics in the territory under the jurisdiction of the Apostolic Delegation of South Africa, it was shown by the *Catholic Directory of South Africa* for 1936, published by the Salesian Press at Cape Town. This area embraces Cape Colony, Natal, Transvaal, Orange Free State, South West Territory, Southern Rhodesia and the protectorates of Basutoland and Swaziland. The first regular Catholic broadcast in South Africa was inaugurated from St. Aidan's college, Grahamstown.

India, with its 58 ecclesiastical divisions, was reported by the 1936 edition of the *Catholic Directory of India* to have a total of 4,056,155 Catholics.

West Indies.—Catholics in Jamaica began to look forward to the observance on January 10, 1937, of the centenary of the establishment of the Vicariate Apostolic of Jamaica. The year saw the institution of diplomatic relations between the Holy See and Cuba. Haiti received its newly named Apostolic Nuncio, Archbishop Maurilio Silvani, formerly attached to the Vatican Secretariate of State.

Latin America.—His Eminence Santiago Luis Cardinal Copello, Archbishop of Buenos Aires and Primate of Argentina, issued a pastoral letter calling for daily prayers for the success of the Inter-American Conference at Buenos Aires. Archbishop Giuseppe Fietta, Papal Nuncio to Haiti, was named Papal Nuncio to Argentina to succeed Archbishop Filippo Cortesi. Official representation of the Government of Guatemala at the Vatican, lacking from time immemorial, was reestablished in October. In Chile, Dr. Ricardo Cox Mendez, President of *Centro de Estudios Religiosos*, which urged the governments of Argentina,

Brazil and Chile to use their good offices to effect a cessation of the religious persecution in Mexico, declared the revolution in Mexico to be the "most tragic fact," with the sole exception of the Chaco war, in twentieth century Spanish-American history. The year saw the Bishops of Colombia protesting proposed amendments to the Constitution of that country, which, they said, would change that document from one that is "clearly Christian for the government of a Christian people" to one that is atheistic.

China.—A total of 2,818,839 Catholics are reported in China by the 1936 edition of the *Annuary of the Catholic Missions of China*. The publication says there are 4,309 priests in China, or one priest for every 654 Catholics. It also reports that there are 1,747 Chinese clergymen in China, of whom 13 are Bishops. The statistics cover the period from June, 1934, to June, 1935. Three new native Chinese Bishops were named in 1936 by the Holy See.

Japan.—That the Catholic Church in Japan is enjoying a steady growth is revealed by statistics showing that the Catholic population of Japan increased from 87,581 in 1927 to 105,660 in 1935, and that the increase for Japan proper was 2,389 in 1935. The population of Japan is 66,869,723. In Chosen (Korea), Formosa and the Mandate Islands there are 155,948 Catholics out of a total population of 26,164,095. During the latter part of 1936, it was announced that the first specimen pages of the *Japanese Catholic Encyclopaedia* would soon be published. The project has been launched by the "Sophia," Catholic University of Tokyo.

Indo-China and Siam.—Showing a gain of more than 35,000 in one year, the Catholics in Indo-China and Siam totaled 1,503,267. The Catholics in Indo-China totaled 1,441,124 out of a total population of 23,525,000 and the Catholics in Siam were 62,143 in a total population of 12,827,000. The first Catholic Youth Congress ever held in Indo-China, which took place at Nam-Dinh, Tonking, far exceeded expecta-

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tions, being attended by 5,000 young men.

Madagascar.—The Colonial Administration of Madagascar announced its decision to open a new leper asylum in the Vicariate Apostolic of Fort Dauphin, which is in charge of the Vincentian Fathers, and to give over its administration to the Daughters of Charity.

Fiji Islands.—The leper settlement founded by Sisters of the Society of Mary at Makogai, Fiji Islands, observed its 25th anniversary in 1936, and the Most Rev. Charles Nicolas, Vicar Apostolic of the Fiji Islands, announced during the year the plans for the enlargement and completion of the Cathedral at Suva.

THE EASTERN CHURCHES

BY L. L. SCAIFE AND E. R. HARDY, JR.

GENERAL THEOLOGICAL SEMINARY, NEW YORK

RUSSIAN ORTHODOX CHURCH

During the year 1936 the chief development in the Russian Orthodox Church was the increasingly harmonious working of the union produced by the reconciliation effected between the major groups in 1935. Only an extremely small section of the Russian Orthodox Church is not included in the united body. The Russian Orthodox Church in North America now includes 346 churches and chapels, of which 45 are in Canada and 18 in Alaska. Its head is the Most Rev. Theophilus, Archbishop of San Francisco and Metropolitan of all America and Canada. The office of the metropolitanate, however, is at 105 East Houston St., New York. New York is also the headquarters of the central diocesan council of clergy and laity and the place of publication of the *Russian Orthodox Messenger*, official magazine in Russian.

The bishops under the Metropolitan's jurisdiction are: Vitalij of New Jersey, Makarij of Boston and New England, Adam of Philadelphia, Benjamin of Pittsburgh, Tikhon for the western States, residing in San Francisco, Arsenij of Canada, Leontios of Chicago, Joasaph of Montreal, Joachim of Detroit, and Alexij of Alaska. In addition the Church is divided into 19 districts, headed by a priest elected by the clergy of the district. The largest number of parishes are located in the mining districts of Pennsylvania, although parishes exist in the principal cities in all parts of

the United States and Canada. In most cases the church council is an incorporated body owning church and parish house.

There was a conference of bishops at Pittsburgh in May and another at Chicago in November. These gatherings, at which the Metropolitan presided, were largely devoted to the problems arising out of the union of the previously independent jurisdictions. A convention of clergy and laity is to meet in New York in 1937. As one of the autonomous metropolitanates of the (temporarily separated) Russian Orthodox Church outside Russia, the Church in America also belongs to the Russian Synod which meets in Yugoslavia. At the September session of that synod it was represented by Bishop Makarij of Boston.

An educational council recently established by the Metropolitan Theophilus has as its aim the promotion of religious education in parishes. The establishment of an institution for the training of the clergy is also hoped for. At its annual convention, which was held in Philadelphia, the Federation of Russian Orthodox Clubs promised co-operation in the religious education program. The FROC is composed of some 70 Russian Orthodox youth clubs with a membership of about 3,000; its organ is the *Russian Orthodox Journal*, published in English at Grand Rapids, Mich. This English magazine is an indication of the Americanization of the younger generation for whose benefit services wholly or partly in English

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have been introduced in certain parishes. The work of the Church is also assisted by several Russian mutual aid societies, mostly with headquarters in Pennsylvania and publications in Russian.

HELLENIC (GREEK) ORTHODOX CHURCH

The Greek Archdiocese of North and South America under Archbishop Athenagoras has continued its work during 1936 without unusual incident. There is one assistant bishop, and about 250 congregations. The interests of the Church are promoted by various educational and philanthropic organizations. The official publication of the Archdiocese is the *Orthodox Observer* bi-monthly issued in Greek at New York.

SYRIAN ORTHODOX CHURCH

The election of the Rt. Rev. Antony Bashir, provisional patriarchal vicar, as Archbishop for North America, was confirmed by the patriarchal synod of Antioch. He was consecrated April 19, 1936 in the Syrian Orthodox Cathedral of St. Nicholas in Brooklyn, New York, by the Metropolitan Theodosius of Tyre and Sidon, patriarchal delegate, and Archbishop Vitaly of the Russian Church. The Metropolitan Antonios, as he is to be known, studied at the American University in Beirut and has been in this country for some years.

On the same day the Rt. Rev. Samuel David was consecrated to the episcopate in Toledo, Ohio, by three Russian bishops. This has unfortunately resulted in a split in the Syrian Orthodox Church, but it is expected that, under the leadership of Archbishop Antonios, unity will be restored, or, more correctly, attained, since the Syrian Church has never been a single unified body. (See THE AMERICAN YEAR BOOK, 1936).

RUMANIAN ORTHODOX CHURCH

With the arrival of Bishop Policarp Morusca in 1935 the organization of the Rumanian Orthodox Church was begun. A congress of parochial delegates was held at Youngstown, Ohio, Sept. 5-7, 1936. Statutes for the government of the Church were adopted.

Organized as a missionary episcopate under a bishop appointed by the Holy Synod of the Rumanian Orthodox Church, its congress is to consist of the clergy together with two lay delegates from each parish. The parishes, in which the adult male communicants, together with the parish priest, constitute the parish assembly, are to be grouped into protopopiates. The bishop, together with his council, will be responsible for central missionary and educational efforts. The congress also discussed the immediate needs of the Church. Of these the chief are provision for education of the clergy, and the establishment of a center where may be located a residence for the bishop, a monastery, school, and other institutions. This would probably be in the mid-west where the largest number of Rumanians reside.

At present there are in the United States 33 parishes and 52 missions, claiming 40,000 communicants, and in Canada 10 parishes and six missions, claiming 10,000 communicants. There are 41 clergy, of whom 20 were ordained in Rumania, the others by Russian bishops in the United States. Several students are now being prepared in Rumania. In addition to the organized Church there are several independent parishes, a relic of the previous irregular period. The Russian bishops are cooperating, however, in efforts to bring these parishes into union with the Church.

SERBIAN ORTHODOX CHURCH

Since the death of Bishop Mardary in 1935, the Serbian Orthodox Church with some 40 parishes has been under the jurisdiction of Leontios, Russian Orthodox Bishop of Chicago.

ARMENIAN APOSTOLIC CHURCH

The Armenian Apostolic (Gregorian) Church has had as its guest during the last few months the Most Rev. Archbishop Karakin Hovsepian, delegate from the Catholicos of All Armenians at Etchmiadzin, Soviet Armenia. He presided at a diocesan conference and visited the parishes in all parts of the country. As a result of his visit and preaching there has

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been a renewed spiritual interest and, for the first time since the assassination of Archbishop Leon Tourianx in 1934, life in the Armenian Church has been proceeding in a normal and vigorous manner. Mgr. Calfayan, acting prelate of the Armenian Church in this country, has been designated as such for another year. A convention is to be held in 1937 at which a permanent prelate and a new executive committee will be elected.

RELATIONS WITH OTHER CHURCHES

While the Eastern Churches are mainly occupied with their own problems and remain loyal to their own principles, they aim at friendly relations with other Christian bodies. At the luncheon given by "oecumenical" organizations to the Archbishop of

York in New York in December, 1935, representatives of the Greek and Russian Churches were present. The interchange of courtesies between the Episcopal Church, both the Orthodox Churches and the Armenian Church continues. A notable incident was the presentation by the Oecumenical Patriarch of Constantinople of an icon of St. John to the Cathedral of St. John the Divine in New York; the presentation took place at a special service on Oct. 21 at which Archbishop Athenagoras represented the Patriarch and the gift was received by Bishop Manning. Considerable interest was roused by the visit of the Very Rev. Sergius Bulgakov of the Russian Theological Academy in Paris to the United States in October and November during which Fr. Bulgakov spoke in both Orthodox and Episcopal Churches.

JUDAISM AND JEWISH COMMUNAL AFFAIRS

BY BERNARD G. RICHARDS

DIRECTOR, JEWISH INFORMATION BUREAU

JEWISH PERSECUTION IN GERMANY

Diverted from their religious, educational, philanthropic, and cultural activities at home, the Jews of America during 1936 were again called upon to devote much time, energy, and considerable means to conditions affecting their oppressed and poverty-stricken brethren in European lands. As during the three previous years, Germany with its ruthless persecution of the Jews and other religious minorities, which has characterized the Nazi régime, has remained a major problem. The gradual displacement of men and women of the Jewish race and faith from the professional, artistic, commercial life of the country has gone on apace. With various manifestations of social ostracism, casting the members of the Jewish community out of their established and recognized positions and causing them spiritually to draw within themselves and find solace within the synagogues and their own organizations, clubs and other social

circles, these persecutions have, as heretofore, produced new soul-searchings and an intensification of the religious life which in this day and age is bound to be regarded as remarkable.

The various forms of discrimination and the exceptions prompted by the Aryan theory of racial superiority have necessitated the establishment of a separate system of Jewish schools, and by the same token special dramatic, musical and literary societies have been formed for the presentation of plays and operas, the giving of concerts and entertainments, and the production of books and magazines intended to spread a better knowledge of Jewish history and Jewish spiritual and cultural values. The production of books of Jewish interest in the German language, supplemented by the printing of a considerable number of Hebrew books, constitutes a veritable literary revival, and that much of this literature exceeds in quality publications produced in other lands, forms

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one of the paradoxical phenomena of the time.

The climax of Nazi persecutions was reached in the Nuremberg laws promulgated in September which, while making new classifications between citizens and subjects, in effect reduced the position of the Jewish citizens to a class of undesirable but tolerated aliens. The problem of Jewish refugees fleeing from their native land of Germany, like the problem of German Christians belonging to the oppressed minorities, continues to be a source of much anxiety and care to the various groups and organizations which have been endeavoring to cope with the situation.

Last March, Sir Neill Malcolm was appointed High Commissioner of Refugees of the League of Nations to succeed Dr. James G. MacDonald of New York, who had resigned in protest against Nazi policies, and various civil organizations, Jewish and non-Jewish, here and abroad, are giving their cooperation in the task of placing these wanderers in different lands and helping them to start life anew. Altogether close to 100,000 Jews had already left Germany and, as previously indicated, a large portion of these had settled in Palestine.

ANTI-SEMITISM IN POLAND AND OTHER COUNTRIES

Next to the acute and perplexing problem which is presented by the lot of the Jews in Nazi Germany, comes the plight of 3,000,000 Jews in Poland. Here, owing to the adverse economic conditions which affect all elements of the population, to discriminatory laws directed against the Jews and introduced by the government, and to a violent anti-Semitic propaganda carried on by at least one of the political parties, the position of the Jews has become a continuous source of anxiety. This has been aggravated by series of anti-Jewish riots and assaults upon Jewish lives and property which began in the fall of 1935 and were resumed in the spring of 1936. In March, other excesses occurred and, despite

the assurances of the government that order would be established, disturbances continued to break out from time to time, causing much uneasiness to all those groups in this country who seek to aid the oppressed in Israel everywhere. The situation has further been complicated by conversations which the Jewish groups have never authorized between certain spokesmen and the Foreign Minister, Joseph Beck, relating to the possibility of a mass emigration from Poland, and with such openings being unavailable and the Jews having lived on Polish territory for 1,000 years and claiming the right to remain where they are, the premature and ill-considered ideas of mass emigration have only added bitterness and confusion to the prevailing conflict. Out of Roumania, Austria, Lithuania, and other lands, have come disquieting reports of anti-Semitic agitation and economic discrimination, and Fascist Italy, long free from any taint of racial prejudice, has witnessed newspaper attacks upon the Jews, the detractors as in other lands echoing the libels of the Nazi press in Germany.

CONDITIONS IN PALESTINE

To add to the troubles and anxieties centering around the distress and the unsettled economic and political conditions in Eastern Europe, a new cloud during the year was cast over what has been previously described "as the one bright spot on the Jewish horizon," namely, the remarkable achievements and the promise of a new life which has accompanied the resettlement of Palestine by the Jewish people.

The *American Jewish Year Book* records these occurrences in part as follows: "The bloody rioting in Palestine, beginning about April 17, turned the attention of the entire Jewish community to that country and enlisted the interest of large sections of non-Jews as well. On April 23, the Zionist Organization of America announced that David Ben-Gurion, chairman of the Executive of the Jewish Agency for Palestine, had given assurances by telephone

from Jerusalem that nothing had occurred to swerve the Jewish community from its rebuilding work, that the heroism, self-restraint and discipline of the Jewish community under attack was a source of pride to the Executive, and that the High Commissioner had assured the Agency that the government was prepared to cope with any emergency. At the same time, the Zionist Organization of America announced the formation of a special committee, representing all Zionist parties, for the purpose of organizing American Jewish support for Palestine Jews during the emergency. A small sub-committee was also formed, which was to meet daily during the riot crisis."

With the continuance of these disturbances and the organization of a strike by the Arabs against participation in all work and commerce of the country, it became necessary for Great Britain as the mandatory power to take some drastic action, and after gradually increasing its military garrison of the country, a Royal Commission was appointed to go to Palestine and investigate conditions on the spot. This Commission, consisting of Earl Peel, chairman; Sir Horace Rumbold, vice-chairman; Sir Lowry Hammond, Sir Morris Carter, Sir Harold Morris and Professor Reginald Coupland, held many hearings during the closing weeks of 1936, at which time leaders of the Zionist movement, principally Dr. Chaim Weitzmann, and the heads of the Jewish Community of Palestine, presented the case for the Jewish National Homeland in process of reconsideration. The Arab leaders at first boycotted the hearings of the Royal Commission and then toward the end of its sessions consented to come and present their various grievances.

ORGANIZED EFFORTS FOR PROTECTION OF JEWS

These and similar problems including the agitation for a Jewish World Congress, which was finally initiated in Geneva in August, held the attention of a number of organizations and agencies which have heretofore

dealt with identical questions. The American Jewish Congress, the American Jewish Committee, the B'nai Brith, and a new body called the Labor Committee for Jewish Rights have continued to interest themselves in all problems involving the maintenance of the legal status and civic rights of the Jews in different lands. Several of these central organizations, which are constituted by and authorized to speak for extensive constituencies of local societies and associations, devoted themselves also to the task of checking and combating manifestations of anti-Semitism in the United States, which, being prompted by a number of reactionary groups and small, freak publications, attempted to make themselves vociferous during the recent Presidential campaign, when certain Fascist sympathizers vainly tested public opinion with motives springing from European dictatorships which were quickly discounted and rebuked. The work of relief, especially for the Jews suffering from a variety of ills in Eastern Europe, has been led by the American Joint Distribution Committee which, owing to precarious conditions now prevailing, has found it necessary to collect more extensive funds to aid the needy, the destitute, and those fleeing to new havens of refuge.

RELIGIOUS, CULTURAL AND EDUCATIONAL AFFAIRS

Many of the leaders identified with this onerous negative task of warding off blows and succoring the distressed, have also been engaged in a positive program of building up the religious and cultural life of the Jewish community in America, and this dual rôle has naturally placed heavy burdens upon the limited personnel that in most instances makes up the leadership.

The outstanding educational event of the year was the celebration of the 50th anniversary of the founding of the Jewish Theological Seminary of America in New York, and the various sessions that were held in connection with this commemoration brought out many scholarly utter-

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ances on the part of Jewish and non-Jewish scholars, the occasion having also been utilized for the holding of a number of discussions and symposiums dealing with problems of research, culture, and communal organization. Similar observances were held to mark the founding of the Yeshiva College, not as a college but as an old time Yeshiva or Theological seminary originally founded on the lower East Side in New York.

The other theological seminaries, those in New York and the one that is located in Cincinnati, O., have continued the pursuit of their objectives in training rabbis, encouraging research and scholarly work and accumulating collections of books and manuscripts of a rare and important character. The various associations of Hebrew and religious schools and the teachers' colleges and similar institutions in different parts of the country have gone on with their la-

bors in training the young in a knowledge of Judaism, the Hebrew language, and literature. As auxiliary to these efforts many books relating to the subject of education and textbooks have been issued during the year. A summary of achievements in the direction of Jewish religious education in the last 25 years has been written by Dr. Israel S. Chipkin of the Jewish Education Association and the same appears in the last number of the *Jewish Year Book*.

The advancement of Jewish literature and scholarship in America shows an accession of important works in Hebrew, Yiddish, and the English languages, the official literary movement being sponsored by the Jewish Publication Society of America with headquarters at Philadelphia. This Society has, among other works recently issued, a series of English translations of famous Hebrew classics.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

NATIONAL CHURCHES

AMERICAN BAPTIST HISTORICAL SOCIETY, Chester, Pa.

AMERICAN UNITARIAN ASSN., 25 Beacon St., Boston, Mass.

BOARD OF DIRECTION OF THE GENERAL SYNOD OF THE REFORMED CHURCH IN AMERICA, 25 E. 22nd St., New York City.

CHRISTIAN SCIENCE CHURCH, 11 W. 42nd St., New York City.

CONGREGATIONAL CHRISTIAN GENERAL COUNCIL, 287 Fourth Ave., New York City.

FREE CHURCH OF AMERICA, 25 Beacon St., Boston, Mass.

FREETHINKERS OF AMERICA, INC., 317 W. 34th St., New York City.

FRIENDS' GENERAL CONFERENCE OF THE RELIGIOUS SOCIETY OF FRIENDS, 1515 Cherry St., Philadelphia, Pa.

GENERAL CONFERENCE OF SEVENTH-DAY ADVENTISTS, 6840 Eastern Ave., N. W., Takoma Park, Washington, D. C.

GENERAL COUNCIL OF THE PRESBY-

TERIAN CHURCH IN THE U. S. A., 156 Fifth Avenue, New York City.

NATIONAL LUTHERAN COUNCIL IN AMERICA, 39 E. 35th St., New York City.

NATIONAL SPIRITUALIST ASSN., 600 Penn Ave., S. E., Washington, D. C.

NORTHERN BAPTIST CONVENTION, 152 Madison Ave., New York City.

SOCIETY FOR ETHICAL CULTURE OF NEW YORK, 2 W. 64th St., New York City.

THEOSOPHICAL SOCIETY IN AMERICA, Wheaton, Ill.

UNION OF AMERICAN HEBREW CONGREGATIONS, Merchants' Building, Cincinnati, Ohio.

UNION OF ORTHODOX JEWISH CONGREGATIONS OF AMERICA, Amsterdam Ave. & 186th St., New York City.

UNITED LUTHERAN CHURCH IN AMERICA, 39 E. 35th St., New York City.

UNITED SYNAGOGUE OF AMERICA, Broadway and 122nd St., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

UNIVERSALIST GENERAL CONVENTION,
16 Beacon St., Boston, Mass.
VEDANTA SOCIETY, 34 W. 71st St.,
New York City.
VOLUNTEERS OF AMERICA, 34 W. 28th
St., New York City.

INTERNATIONAL ORGANIZATIONS

ASSOCIATION FOR THE PROMOTION OF
CHRISTIAN UNITY, Mission Build-
ing, Indianapolis, Ind.
BAPTIST WORLD ALLIANCE, Bates Col-
lege, Lewiston, Me.
CENTRAL BUREAU OF EVANGELICAL
CHURCHES IN EUROPE, 105 E. 22nd
St., New York City.
COMMITTEE ON COOPERATION IN LATIN
AMERICA, 254 Fourth Ave., New
York City.
COMMITTEE ON FRIENDLY RELATIONS
AMONG FOREIGN STUDENTS, 347
Madison Ave., New York City.
CONTINUATION COMMITTEE OF WORLD
CONFERENCE ON FAITH AND ORDER,
111 Fifth Ave., New York City.
ECUMENICAL METHODIST CONFERENCE,
720 Omaha Bank Building, Omaha,
Neb.
INTERNATIONAL ASSN. OF DAILY VACA-
TION BIBLE SCHOOLS, 100 E. 42nd
St., New York City.
INTERNATIONAL ASSOCIATION FOR THE
PROMOTION OF LIBERAL CHRISTIAN-
ITY AND RELIGIOUS FREEDOM, 25
Beacon St., Boston, Mass.
INTERNATIONAL CONGREGATIONAL
COUNCIL, 287 Fourth Ave., New
York City.
INTERNATIONAL SOCIETY OF CHRISTIAN
ENDEAVOR, 41 Mt. Vernon St., Bos-
ton, Mass.
LUTHERAN WORLD CONVENTION, 39 E.
35th St., New York City.
NEAR EAST COLLEGE ASSOCIATION,
INC., 30 Rockefeller Plaza, New
York City.
RELIGIOUS EDUCATION ASSOCIATION,
59 E. Van Buren St., Chicago, Ill.
UNIVERSAL CHRISTIAN COUNCIL ON
LIFE AND WORK, 105 E. 22nd St.,
New York City.
WESTERN SECTION OF ALLIANCE OF
REFORMED CHURCHES THROUGHOUT
THE WORLD HOLDING THE PRESBY-
TERIAN SYSTEM, 226 West Mowry
St., Chester, Pa.

WORLD STUDENT CHRISTIAN FEDERA-
TION, 347 Madison Ave., New York
City.

WORLD SUNDAY SCHOOL ASSN., 51
Madison Ave., New York City.

INTERCHURCH ORGANIZATIONS

AMERICAN BIBLE SOCIETY, Park Ave.
and 57th St., New York City.
AMERICAN SUNDAY SCHOOL UNION,
1816 Chestnut St., Philadelphia, Pa.
CHAPLAIN'S AID ASSN., 401 W. 59th
St., New York City.
CHICAGO TRACT SOCIETY, 440 S. Dear-
born St., Chicago, Ill.
CHRISTIAN COOPERATIVE FELLOWSHIP
IN NORTH AMERICA, 5757 University
Ave., Chicago, Ill.
CHRISTIAN UNITY FOUNDATION, 70
Fifth Ave., New York City.
CHURCH PEACE UNION, 70 Fifth Ave.,
New York City.
COMMUNITY CHURCH WORKERS OF
U. S. A., 77 W. Washington St.,
Chicago, Ill.
CONFERENCE OF THEOLOGICAL SEMI-
NARIES AND COLLEGES IN THE
U. S. A. AND CANADA, Gettysburg,
Pa.
COUNCIL OF CHURCH BOARDS OF EDU-
CATION, 19 West 44th St., New York
City.
EPWORTH LEAGUE OF THE METHODIST
EPISCOPAL CHURCH, 740 Rush St.,
Chicago, Ill.
FEDERAL COUNCIL OF THE CHURCHES
OF CHRIST IN AMERICA, 105 E. 22nd
St., New York City.
FELLOWSHIP OF CHRISTIAN COOPERA-
TION, 2929 Broadway, New York
City.
FREE CHURCH OF AMERICA, 25 Beacon
St., Boston, Mass.
NATIONAL COUNCIL OF PROTESTANT
EPISCOPAL CHURCHES, 281 Fourth
Ave., New York City.
NATIONAL RELIGION AND LABOR FOUN-
DATION, 304 Crown St., New Haven,
Conn.
THREEFOLD MOVEMENT, 315 Fourth
Ave., New York City.

AUXILIARY ORGANIZATIONS

CATHOLIC CHURCH EXTENSION SOCI-
ETY OF THE U. S. A., 360 N. Michi-
gan Ave., Chicago, Ill.
CATHOLIC GUARDIAN SOCIETY, 485
Madison Ave., New York City.

XVII. RELIGION AND RELIGIOUS ORGANIZATIONS

CATHOLIC PROTECTIVE SOCIETY, 477 Madison Ave., New York City.
 CHURCH LEAGUE FOR INDUSTRIAL DEMOCRACY, 154 Nassau St., New York City.
 COMMUNITY CHURCH WORKERS OF THE U. S. A., THE, 1302 Chicago Temple, 77 W. Washington St., Chicago, Ill.
 LORD'S DAY ALLIANCE, 156 Fifth Ave., New York City.
 NATIONAL CONFERENCE OF JEWS AND CHRISTIANS, 105 E. 22d Street, New York City.
 WOMAN'S CHRISTIAN TEMPERANCE UNION, 1730 Chicago Ave., Evanston, Ill.
 WOMAN'S NATIONAL SABBATH ALLIANCE, 156 Fifth Ave., New York City.
 YOUNG MEN'S CHRISTIAN ASSN., 347 Madison Ave., New York City.
 YOUNG MEN'S HEBREW ASSN., 71 W. 47th St., New York City.
 YOUNG WOMEN'S CHRISTIAN ASSN., 600 Lexington Ave., New York City.
 YOUNG WOMEN'S HEBREW ASSN., 31 West 110th St., New York City.

RELIGIOUS PUBLICATIONS

AMERICAN BAPTIST HISTORICAL SOCIETY, Upland Ave., Chester, Pa.
 AMERICAN BAPTIST PUBLICATION SOCIETY, 1701 Chestnut St., Philadelphia, Pa.
 AMERICAN BIBLE SOCIETY, Bible House, New York City.
 AMERICAN TRACT SOCIETY, 7 W. 45th St., New York City.
 CHICAGO TRACT SOCIETY, 440 S. Dearborn St., Chicago, Ill.
 GIDEONS, 202 S. State St., Chicago, Ill.
 NATIONAL TESTAMENT AND TRACT LEAGUE, 200 Kellogg Bldg., Washington, D. C.

POCKET TESTAMENT LEAGUE, 156 Fifth Avenue, New York City.
 RELIGIOUS EDUCATION ASSN., 59 East Van Buren, St., Chicago, Ill.
 SOCIETY FOR THE PROPAGATION OF THE FAITH, 462 Madison Ave., New York City.

MISSIONARY

AGRICULTURAL MISSIONS FOUNDATION, 156 Fifth Ave., New York City.
 AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS, 14 Beacon St., Boston, Mass.
 AMERICAN MCALL ASSN., 112 S. 16th St., Philadelphia, Pa.
 AMERICAN MISSION TO LEPERS, 156 Fifth Ave., New York City.
 CHRISTIAN AND MISSIONARY ALLIANCE, 260 W. 44th St., New York City.
 COMMITTEE OF REFERENCE AND COUNCIL, 156 Fifth Ave., New York City.
 COUNCIL OF WOMEN FOR HOME MISSIONS, 105 E. 22nd St., New York City.
 FEDERATION OF WOMEN'S BOARDS OF N. A., 419 Fourth Ave., New York City.
 HOME MISSIONS COUNCIL, 105 E. 22nd St., New York City.
 INTERNATIONAL MISSIONARY COUNCIL, 156 Fifth Ave., New York City.
 MISSIONARY EDUCATION MOVEMENT OF THE UNITED STATES AND CANADA, 150 Fifth Ave., New York City.
 NATIONAL COUNCIL OF JEWISH WOMEN, 625 Madison Ave., New York City.
 NEAR EAST RELIEF, 2 West 46th St., New York City.
 STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS, 254 Fourth Ave., New York City.
 WOMAN'S UNION MISSIONARY SOCIETY, 67 Bible House, New York City.

PART SIX
SCIENCE—PRINCIPLES AND
APPLICATION
DIVISION XVIII
MATHEMATICS AND ASTRONOMY

MATHEMATICS

BY CHARLES N. MOORE

PROFESSOR, UNIVERSITY OF CINCINNATI

NATIONAL ORGANIZATIONS

The entire group contributing to the advancement of mathematical knowledge and mathematical education in this country is nationally organized in a variety of ways. In the field of scientific achievement the American Mathematical Society, an organization with a membership of some 2,000 individuals, is primarily concerned with the fostering and promotion of research activity. The existence of a strong organization of this type has been a highly important contributing factor in the remarkable development in American mathematics that has taken place during the present century. As recently as the late nineties of the preceding century, the role of America in the advancement of mathematical knowledge was properly regarded as a minor one. At the present time it is generally conceded throughout the mathematical world that the volume and the caliber of mathematical production in America compare favorably with similar achievements in any other country on the globe.

In the field of collegiate mathematics there exists another strong national organization, the Mathematical Association of America. It was recog-

nized about 20 years ago that the dominant aim of the American Mathematical Society, namely the promotion of research, rendered it difficult for this organization to serve adequately the interests of the rather large group of mathematical educators in the colleges of the nation, whose primary activity was in the teaching of mathematics at the collegiate level. Accordingly, the sister organization mentioned above was formed, and from the start it had a rapid and gratifying growth. The two societies, which naturally are supplementary rather than competing organizations, work together in complete harmony. They regularly have a joint meeting twice a year, and to a large extent they have a common membership.

In the field of secondary education in mathematics, there exists likewise an active national organization, the National Council of Teachers of Mathematics. This society serves primarily the interests of those whose educational work is carried on in high schools and preparatory schools, but it has a considerable membership among other groups of mathematical educators who take an interest in its work and appreciate the desirability

XVIII. MATHEMATICS AND ASTRONOMY

of offering moral and financial support to such an organization. Mathematics, more than any other science, is dependent for its best development on a high level of mathematical education, beginning in the primary school and continuing through all the more advanced educational institutions.

The various student mathematical clubs in the different colleges and universities have likewise realized the desirability of some form of national solidarity. Accordingly, there have been organized two mathematical fraternities of national scope: namely, Pi Mu Epsilon and Kappa Mu Epsilon. Both these organizations have a considerable number of local chapters at educational institutions in various parts of the country.

NATIONAL AND REGIONAL ACTIVITIES

During the year 1936 the American Mathematical Society held meetings in New York in February, April, and October; in Chicago and Berkeley, California, in April; in Seattle, Washington, in June; in Cambridge, Mass. in September; in Lawrence, Kan., in November, and in Los Angeles in November; and it held its annual meeting at Duke University and the University of North Carolina in December.

The Mathematical Association of America held its summer meeting in Cambridge, Mass., in September, and its annual meeting at Duke University and the University of North Carolina in December. Moreover, its 19 sections, either statewide or involving several neighboring States, held meetings in suitable localities at various times during the year. The National Council of Teachers of Mathematics met in St. Louis in January and in Portland, Ore. in June.

In addition to these meetings of national scope, many regional and local meetings were held throughout the country by groups of mathematicians and teachers of mathematics. These meetings were too numerous to permit of detailed mention here.

MATHEMATICAL MEETINGS AT HARVARD UNIVERSITY

The joint summer meeting of the American Mathematical Society and the Mathematical Association of America held Aug. 31—Sept. 5 at Cambridge was rendered particularly notable by taking place in connection with the Harvard Tercentenary Conference of Arts and Sciences. As a result the meeting was by far the largest, and likewise one of the most significant, in the history of the mathematical organizations. All lectures given during this period under the auspices of the Tercentenary Committee were open to the mathematicians. Moreover, those attending the meeting were housed in dormitories in the Harvard Yard as guests of Harvard University up to the capacity of these halls.

The invited lecturers constituted a notable group of world-famous scholars, speaking on topics concerning which they themselves rank as leading authorities. The list of speakers was as follows: Professor R. A. Fisher of the University of London, Professor G. H. Hardy of the University of Cambridge, Professor Rudolf Carnap of the Deutsche Universität at Prague, Professor E. J. Cartan of the University of Paris, Professor L. E. Dickson of the University of Chicago, Professor Tullio Levi-Civita of the University of Rome, and Sir Arthur Stanley Eddington, professor of astronomy at the University of Cambridge.

The American Mathematical Society followed its well-established custom of offering a series of Colloquium Lectures in connection with the summer meeting. These lectures were given by Professor E. W. Chittenden of the University of Iowa on the subject: "Topics in General Analysis." An invited address by Professor G. C. Evans of the University of California was also a feature of the meeting of the Society. An outstanding program of invited addresses was arranged by the Mathematical Association of America, with the following speakers: Professor Edward Kasner of Columbia University, Professor Constantin Caratheo-

dory of the University of Munich, Professor G. A. Bliss of the University of Chicago, and Professor G. D. Birkhoff of Harvard University.

The excursions, social gatherings, and other special features in connection with the meeting measured up to the high caliber of the scientific program. Those who had the good fortune to be in attendance at Cambridge will long remember this notable reunion of scientific workers in mathematics and related fields.

INTERNATIONAL MATHEMATICAL CONGRESS AT OSLO

The International Mathematical Congresses, held normally at four-year intervals, have long been a notable feature in connection with the advancement and diffusion of mathematical knowledge. Such a congress was held in Oslo, Norway, July 13-18, 1936. Of the approximately 700 persons registered at the Congress, 128 were from the United States and 13 from Canada. Thirty-nine of the 15-minute papers were presented by members of the American Mathematical Society. Of the hour addresses, presented only by invitation, four were by the following American mathematicians: Professor Oswald Veblen of the Institute for Advanced Study, Professor G. D. Birkhoff of Harvard University, Professor L. V. Ahlfors of Harvard University, and Professor Norbert Wiener of the Massachusetts Institute of Technology.

The American delegation was particularly honored at the inaugural meeting of the Congress in that two young men on the staffs of American universities were the recipients of medals offered by the late Professor Fields, such medals, in accordance with the report of the Zürich Congress of 1932, being awarded at intervals of four years by the International Congresses. The committee chosen at the Zürich Congress to name the recipients of the medals to be awarded in 1936 was composed of Professors Severi (chairman), Birkhoff, Caratheodory, Cartan, and Takagi. The two medals were awarded to Professor L. V. Ahlfors of

Harvard University and Professor Jesse Douglass of the Massachusetts Institute of Technology for outstanding achievement in mathematics.

The official delegates to the Congress from American scientific organizations included the following mathematicians: Professors Birkhoff, Blichfeldt, Eisenhart, Lefschetz, Morse, Snyder, Veblen, and Wiener. At the closing meeting of the Congress, on July 18, an invitation was offered by the American delegation to hold the next international Congress in America in 1940. This invitation was accepted with thanks.

MATHEMATICAL PUBLICATIONS

In the field of mathematical publication the American Mathematical Society continued the publication of its two official journals: the *Transactions of the American Mathematical Society* and the *Bulletin of the American Mathematical Society*. The former of these is devoted to the publication of important research contributions that have been read before the Society; the latter contains shorter research articles, reviews, expository papers presented before the Society, and an account of the activities of the Society and related mathematical happenings. The Mathematical Association of America publishes as its official journal *The American Mathematical Monthly* which chronicles the official activities of the organization and publishes mathematical papers dealing with collegiate mathematics and related fields. The official journal of the National Council of Teachers of Mathematics is *The Mathematics Teacher*. This publication is concerned primarily with questions concerning mathematical education, particularly in the secondary field. It also gives an account of the activities of the National Council. In addition to the official journal, the Council also publishes an annual yearbook on subjects connected with mathematical education.

Other mathematical publications are *The American Journal of Mathematics*, published under the joint auspices of Johns Hopkins University

and the American Mathematical Society, the *Annals of Mathematics*, published under the auspices of Princeton University and The Institute for Advanced Study, and the recently founded *Duke Mathematical Journal*, published under the auspices of Duke University. These three journals are all devoted to the publication of important research contributions. In addition to these there is published by a group at Louisiana State University, the *National Mathematics Magazine*, which contains articles on the cultural side of mathematics, on the teaching of mathematics, and other matters of general interest.

Aside from these journals devoted exclusively to the publication of mathematical papers, various other publications have contained articles of a mathematical nature. Among these may be mentioned: the *Proceedings of the National Academy of Science*, *Science*, the *Annals of Mathematical Statistics*, and *School Science and Mathematics*.

MATHEMATICAL RESEARCH

The research activity of American mathematicians continued in increasing measure during the year 1936, and the facilities for publication were taxed to the limit. Although the inauguration of the *Duke Mathematical Journal* in 1935 served to relieve the pressure temporarily, all the research journals have much material on hand, and it is the ordinary procedure for larger articles to be delayed a year or more in the course of publication.

The research published was impressive not only from its volume but also from its high level of scientific importance. Mathematical results of the type appearing in research journals are of such a highly technical character that it is almost impossible to give an account of them that will be significant for the general reader. For this reason the present report will deal only with two outstanding contributions of the year 1936. This limitation in no way implies the lack of other contributions of comparable merit.

Many theories and developments in pure mathematics arise directly or indirectly from problems suggested by the application of mathematics to other sciences. Sometimes a theory starting in this way undergoes development at the hands of mathematicians for many years before it is reapplied in the original field of science suggesting it or in some other field. At other times the development of theory and its repeated applications go hand in hand, and the influence of each development upon the other is somewhat of a continuous process. Such a situation is well illustrated historically in the development of the differential and integral calculus at the hands of Newton, Leibniz, and their immediate successors, simultaneously with extensive applications of this new and powerful mathematical tool in the fields of astronomy and physics.

The present epoch in the development of mathematics and physics presents many analogies to the period to which reference has been made. Mathematical physicists are continually facing the necessity of using mathematical developments which a few years ago would have been regarded as of purely theoretical interest. At the same time problems faced by the theoretical physicist have furnished a powerful stimulus to the development of certain mathematical fields. A highly important paper falling in the domain of this development is one by F. J. Murray and J. von Neumann, entitled "On Rings of Operators" (*Annals of Mathematics*, volume 37, 1936, pp. 116-229). This paper gives the most recent development of a theory originated by J. von Neumann in 1929 (cf. *Mathematische Annalen*, volume 102, pp. 370-427). Not only do the results have application in the field of quantum mechanics, but some of the developments have been suggested by the needs of workers in that field.

Mathematical results falling in the domain of classical number theory, that is to say dealing with properties

ASTRONOMY

of the positive integers and relationships between them, are relatively easy for the individual with a limited mathematical training to comprehend. By a curious contrast, problems in this field frequently are among the most difficult for mathematicians to solve in the sense of obtaining a conclusive logical proof of results believed to be true. One problem of this type is that known as Waring's problem because it originated in a conjecture of the English mathematician Waring, which dates back nearly two centuries. It is desired to

determine, for each positive integer n , the minimum number of n th powers of integers ≥ 0 into which every positive integer can be decomposed, in the sense that the sum of the n th powers will equal the given integer. A series of papers dealing with this problem was published during the year 1936 by L. E. Dickson in the *American Journal of Mathematics*, the *Annals of Mathematics*, and the *Duke Mathematical Journal*. In the course of these papers a definitive solution of Waring's problem was obtained.

ASTRONOMY

BY HENRY NORRIS RUSSELL

PROFESSOR, PRINCETON UNIVERSITY

THE ORIGIN OF THE PLANETS

It is very difficult to form any theory regarding the origin of the solar system which will stand the test of elementary dynamical principles. The old hypothesis that it originated from a rotating and contracting nebula broke down because it demanded a very rapid rotation for the Sun which rotates slowly. The theories, of several types, which assume the planets to have been produced by the passage of another star close to the Sun, or even by a collision with it, do much better; but they meet with fatal difficulty in explaining how the planets got so far from the Sun, and move in such large orbits, with so much angular momentum.

This difficulty has been met by a young English student, R. A. Lyttleton, who assumes that the Sun was originally a double star, and that a passing star collided not with the Sun but with its companion. He has shown that, in such a case, it is quite possible that the star might have set the companion into motion so fast that it escaped into the depths of space, and flew away itself in nearly the opposite direction, without being "captured" by the Sun; and that, nevertheless, a part of the mixed material resulting from the grazing

collision of the two bodies might have much slower motions, relative to the Sun. This matter, condensing into separate masses, would form planets, all revolving about the Sun in the same direction, but in orbits of different sizes. The very serious dynamical difficulties arising from the distribution of angular momentum in the planetary system have thus at last been overcome.

The planetary orbits would initially have been highly elliptical. The part of the ejected matter which did not condense into planets would form a resisting medium whose action would tend to round up their orbits; though whether this could have produced the present nearly circular forms is uncertain.

In the early stages collisions between different planets would have been possible. These may have caused the formation of their satellites, which was very difficult to explain on the older theories.

How the intensely hot matter resulting from a collision between two stars could have condensed into the planets, especially the smaller ones, is still by no means clear; but Lyttleton's theory has disposed of dynamical difficulties which were still graver, and represents a notable advance.

THE SUN

H. H. Plaskett finds that the luminous "granules" which are scattered thickly over the normal surface are at most ten per cent brighter than the intermediate background. They average about 2,000 miles in diameter, and are short-lived, fading out and being replaced by others after a few minutes. They are explained as warmer regions, produced by rising currents of moderate intensity in the region below the visible surface.

The total solar eclipse on June 19 was observed by many parties at stations in the Greek Islands, Russia, Siberia, and Japan. Weather conditions were favorable on the whole; and several parties, including one from the Harvard Observatory, brought back a wealth of photographs, which it will take years to measure and work up fully.

Miss Moore, in December, 1936, reported that three additional elements—osmium, iridium and thulium—had been added to the list of those whose lines appear in the solar spectrum. Previous identification had been uncertain for lack of precise laboratory measures. This raises the number of elements spectroscopically detected in the sun to 61. Six or eight others are still on the doubtful list, awaiting better observations. For almost all the remaining elements the strongest lines are in the far ultra-violet region, to which the Earth's atmosphere is opaque. For four elements—rhenium, thallium, bismuth and radium—the strongest lines are accessible, and fail to appear. These elements must be very rare on the sun, as they are on Earth.

THE PLANETS

Pettit and Nicholson find, from measures of the heat radiation from Mercury, that the temperature of its surface, at the point facing the Sun, ranges from 412° Centigrade at perihelion to 277° at aphelion—in agreement with the values to be expected from the intense radiation which it receives from the Sun.

THE ASTEROIDS

The complete list of discoveries and calculated orbits can be brought

up only to 1935, in which year 268 new discoveries were made. As usual, most of these escaped without sufficient observations to permit a tolerable orbit determination but this was possible for 43, raising the number of catalogued orbits to 1,344.

A 13th magnitude planet, discovered by Delporte at Uccle, Belgium, on Feb. 12, 1936, proved to have a very remarkable orbit. Prompt work by computers and observers made it possible to follow it until April 11, when it was photographed at Mount Wilson, though of magnitude 20.5! Its period is 2.55 years, and the orbital eccentricity 0.76, so that its least distance from the Sun is 41,000,000 miles and its greatest slightly more than 300,000,000 miles. The inclination is only $1^{\circ} 25'$, so that its orbit passes within 1,000,000 miles of those of Venus and Mars, and within 1,500,000 miles of the Earth's. At rare intervals this little planet and one of the larger ones will come at the same time to the point where their paths so nearly meet. Such a close approach happened five days before its discovery, but may not occur again for centuries. The diameter of the new planet, as estimated from its brightness, is about half a mile, making it much the smallest known astronomical body. It has been named *Adonis*. There is little hope of seeing it again until it comes fairly close to the Earth once more.

The asteroid Eros shows regular variations in brightness, with a period of $5^h 16^m$. The range of brightness is sometimes almost in the ratio 4:1 and at others very small. Krug and Schrutker-Rechtenstamm, and independently Watson, have shown that these remarkable changes can be accounted for if the planet is highly elongated (more than three times as long as it is wide) and revolves about its short axis. They agree within 5° as to the position of the equatorial plane. When the Earth is near this plane, the planet can point end-on toward us, and the variations are large; otherwise they are inconspicuous.

COMETS

Three comets were discovered in 1936. The first, found by Peltier at Delphos, Ohio, on May 15, passed within 15,000,000 miles of the Earth in August, and would have been easy to see were it not for the Moon near by. The second, discovered by Kaho in Japan, was not conspicuous. The third, found by Jackson on Sept. 20, has the short period of eight and a half years.

Crommelin has shown by calculation that the comets 1818 I, 1873 VII and 1928 III are returns of the same body, the period being $27\frac{1}{2}$ years. In 1901 it was on the far side of the Sun, and escaped observation.

NOVAE

The year 1936 was remarkable for the appearance of several temporary stars. A bright Nova appeared in the constellation Lacerta, close to the boundary of Cepheus, and was discovered independently by eight or ten different observers on June 17 and 18. On the former date it was of the 5th magnitude, next day of the third. Maximum brightness ($2^m.3$) was reached on the 20th, and the decline was rapid, reaching the 9th magnitude in October. Photographs at various observatories showed that it had previously been visible as a faint star of about the 14th magnitude. The spectrum showed the usual sequence of changes, beginning with dark lines strongly displaced toward the violet, passing to the usual broad bright bands with dark lines on the violet side, and changing gradually into a nebular emission spectrum. It appears to have been a normal example of the rapidly changing type of Nova, except that the velocity of the ejected matter was unusually high, reaching at times 3,500 kilometers per second. The interstellar lines of hydrogen and calcium were strong, indicating a distance of about 2,500 light-years.

An 8th-magnitude nova in Aquila was discovered by Tamm in Sweden, on Sept. 18. It rose to 7^m on Oct. 2, and has since faded. It showed the typical spectrum, and its estimated distance is 2,200 light-years.

Within a few days, another Nova was discovered by an observer in Tokyo, Japan, Oct. 4. It was then of the 6th magnitude, but has rapidly faded. A third object of the same sort, also in Aquila, was discovered by Tamm, on Oct. 7. Photographs made at Harvard indicate that this reached its maximum $6^m.4$ on Sept. 26.

Nova Lacertae and Nova Herculis of 1934 are both still visible, so that five Novae were simultaneously observable with small telescopes, a thing altogether without precedent.

The two components of Nova Herculis continue to separate slowly. They show the nebular spectrum, and are evidently masses of gas ejected from the star at the time of the great outburst. The first of Tamm's Novae in Aquila is also double, and probably represents a similar case.

A much less conspicuous but more remarkable Nova was discovered by Hubble and Moore on Jan. 21 in the extragalactic nebula N.G.C. 4723. When first observed it was of magnitude 14.5, but faded to the 17th magnitude in six weeks. The distance of this nebula, which belongs to the great Virgo Cluster, is estimated as 7,500,000 light-years, so that the real brightness of this "super-Nova" appears to have been 10,000,000 times greater than the Sun's, and more than 100 times that of Nova Lacertae. Its spectrum was photographed by Humason with the 100-inch telescope, and appears to be similar in nature to those of other Novae, except that the bright bands are enormously wide, indicating a velocity of ejection of about 6,000 km/sec. The extreme brightness of this Nova can be explained by assuming that the expanding shell of matter, which once formed the outer layers of the star, before its ejection, was not only expelled with unusual violence, but was also unusually massive, so that it reached a large diameter, perhaps as big as Saturn's orbit, before it became thin enough to be transparent. Until this happened, it would appear to have a luminous surface like a star. At 6,000 km/sec it would have expanded to this diameter in six days.

DOUBLE STARS

Kuiper gives the details of the visual double star of shortest known period. It is a faint red star of magnitude 9.2, with equal components, which complete a revolution in 1.65 years, with an apparent mean distance of $0''.185$. The parallax is $0''.148$, so that the actual distance of the components is 1.25 astronomical units, considerably less than that of Mars from the Sun. The combined mass of the pair is $7/10$ of the Sun's. He continues to find other close pairs among the faint stars of large parallax. Many of these should have short periods.

Another white dwarf star has been discovered by van Maanen. The star is number 627 in Ross's catalogue of proper motion stars, has a parallax of $0''.089$ and an observed photographic magnitude of 13.8, making it about $1/4000$ as bright as the Sun. Its spectrum is A_0 , from which it may be estimated that its diameter is smaller than the Earth's.

STELLAR ENERGY

Atkinson discusses, in the light of recent advances in nuclear physics, the processes by which heat may be liberated within the stars by the formation of heavier elements out of hydrogen. Neutrons, which are essential in some stages of the process, are probably very rare inside the stars, being captured by atoms of one sort almost immediately after their release by those of another.

Adams and Dunham report the discovery of sharp interstellar lines due to ionized titanium in the spectra of distant hot stars in Orion. This element is, therefore, added to the list of those which are scattered, as isolated atoms, through interstellar space. Only the lines absorbed by the ionized atoms in the very lowest energy state appear.

THE GALAXY

Stebbins and Whitford, from the colors of globular clusters, conclude that the layer of thin "fog" which lies near the galactic plane has a slight reddening effect on light which traverses it, but less, in proportion to

its opacity, than if it were composed entirely of gas.

INTERSTELLAR GAS

It has been known for some time that certain lines of sodium and of ionized calcium in the spectra of remote stars are produced by absorption by isolated atoms of these elements, thinly scattered through interstellar space. Adams and Dunham have found additional lines of sodium in the ultra-violet, and also lines of ionized titanium. Only those lines appear which are absorbed by the atoms in the state of lowest possible energy. It is probable that atoms of many more elements are also present; but for most of these the lines which should be absorbed lie too far towards the ultra-violet for observation.

Merrill has found other interstellar lines (or narrow bands) at $\lambda\lambda 5780, 5797$ and 6284 . The origin of these has not yet been identified.

NEBULAE

Struve and Elvey, photographing the diffuse galactic nebulae with color-screens, find that the nebulae near the white stars in Scorpius are bluish white in color, while a newly discovered one near Antares is red, a further proof that these are clouds which shine by reflecting the light of the near-by stars.

Humason records radial velocities for 100 additional extra-galactic nebulae. The greatest values are 42,000 km/sec. for a member of a cluster in Ursa Major, and 39,000 km/sec. for one in Boötes. The distance of the former cluster is estimated at 70,000,000 parsecs (220,000,000 light-years).

Hubble finds that the total light of an average extragalactic nebula corresponds to the absolute magnitude -15.2 , or to 100,000,000 times the light of the Sun. After allowance for the motion of the Sun about the center of the Galaxy, he finds that the velocity of recession of the nebulae is proportional to the distance, at a rate of 526 km/sec per 1,000,000 parsecs. The distance of the great Virgo cluster of nebulae is found to be about 7,500,000

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

light-years. For the scattered field nebulae, the average discordance of the observed velocity from this relation, representing the individual motions of the nebulae, averages 200 km/sec. The nebulae belonging to the great clusters show about three times as great a motion. Sinclair Smith, attributing this to the attraction of the cluster upon its members, finds that the mass of an average nebulae is 200,000,000,000 times that of the Sun. This is more than 100 times as great as might be anticipated from the brightness. The discrepancy is unexplained.

Hubble, correlating the existing data on the numbers of faint nebulae, their apparent brightness and the red-shift in their spectra, concludes that the data can be represented either by a surprisingly small "curved" space, of radius about 500,000,000 light-years, in which the red-shift follows from relativistic principles, or else by a very much larger and more slowly expanding universe in which the red-shift has to be attributed to some unknown cause. Observations with the 200-inch telescope may settle the question.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASTRONOMICAL SOCIETY,
University Observatory, Princeton,
N. J.

AMERICAN MATHEMATICAL SOCIETY,
501 East 116th Street, New York
City.

MATHEMATICAL ASSN. OF AMERICA,
33 Peters Hall, Oberlin, O.

NATIONAL ACADEMY OF SCIENCES, 2101
Constitution Ave., N. W., Washing-
ton, D. C.

SCIENCE SERVICE, 2101 Constitution
Ave., N. W., Washington, D. C.

DIVISION XIX

ENGINEERING AND CONSTRUCTION

STRUCTURAL ENGINEERING

BY WHITNEY C. HUNTINGTON

HEAD, CIVIL ENGINEERING DEPARTMENT, UNIVERSITY OF ILLINOIS

GENERAL

The improvement in the economic status of structural engineering and the construction industry which was commented on a year ago has continued at an accelerated pace in 1936, the most marked improvement being in residential building. During recent years, structural engineering has reached a climax which may not be duplicated for many years to come. This has been quite largely due to the emphasis placed on construction projects by the Federal Government to relieve unemployment resulting from the depression. Another important factor has been the increasing automobile traffic which has made possible the financing of bridges and vehicular tunnels by the tolls collected for their use. In the paragraphs which follow the highest and largest dams, the longest span bridges and the tunnel with the largest cross-section ever constructed and which were under way during the year are described. The maximum height of dams has nearly doubled since 1927, when the 380-ft. Pacoima Dam was completed in California, by the construction of Boulder Dam with its height of 729 ft. The maximum bridge span has much more than doubled since 1930, when the 1,850-ft. Ambassador Bridge was completed in Detroit, by the construction of the 4,200-ft. span of the Golden Gate Bridge which is nearing completion.

DAMS

Boulder Dam.—Since the completion of Boulder Dam last year and its dedication Sept. 30, 1935 by President Roosevelt, work on the power house and other accessory structures, included in the contract with Six Companies, Inc., has been completed and was formally accepted by the Department of the Interior March 1, 1936, less than five years after work was commenced and about two years before the date of completion required by the contract. The total payment of the Six Companies, Inc., was about \$52,000,000 and the actual amount of concrete in the dam itself was 3,240,871 cubic yards. On Feb. 6, the lake created by the construction was formally named Lake Mead in honor of Dr. Elwood Mead, late Commissioner of the Bureau of Reclamation. He was largely responsible for the inauguration and successful completion of this stupendous enterprise. On Sept. 11, as a feature of the Third World Power Conference in Washington, D. C., President Roosevelt pushed a golden telegraph key which released water from the reservoir to start the first generator in the power house immediately below the dam. The initial power installation, not included in the contract of Six Companies, Inc., consists of four 110,000 horsepower generators and provision is made for the ultimate installation of 11 more generators of this capacity and two about half as large.

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Boulder Dam is a concrete arch-gravity dam 727 ft. high above the foundation which rises 584 ft. above the former water level of the Colorado River and has a crest length of 1,180 ft. It is about 300 ft. higher than any dam yet constructed and contains 50 per cent more masonry than any dam now in existence. Mead Reservoir has a capacity of 30,000,000 acre-feet, which is greater than the combined storage capacity of all other artificial reservoirs in the United States but will be rivalled by the Fort Peck Reservoir which will have a capacity of about 20,000,000 acre-feet when completed in 1937. Mead Reservoir, when filled, will cover 227 sq. mi., will have a length of 115 miles, and a maximum width of 8 miles. Its capacity equals the normal two-year flow of the Colorado River. Boulder Dam is the major feature of a project which protects the Imperial Valley in California from floods, provides a controlled flow in the river below the dam and thereby insures water for irrigation and domestic water supply; generates electric power estimated to repay the Federal Government for the cost of the project in 50 years; and includes the All-American Canal to convey water from the Colorado River for the irrigation of the Imperial Valley rather than passing in and out of Mexico, as is the case with the present canal. The total cost of the entire project is estimated at \$160,000,000. The project was designed by, and constructed under the direction of, the U. S. Bureau of Reclamation.

Grand Coulee Dam.—Located on the Columbia River 600 miles from its mouth and 92 miles by highway from Spokane, Wash., the present project includes, as its major feature, the construction of the base of a straight gravity-section concrete dam to an elevation of about 50 feet above the low-water level of the river. The dam will have an ultimate height of about 550 feet, or 177 feet less than Boulder Dam; a crest length of about 4,200 ft.; a maximum base width of about 500 ft.; and volume of over 11,000,000 cubic yards

of concrete or about three and one-half times that of Boulder Dam, now the largest masonry dam in the world as well as the highest. The concrete in the Grand Coulee Dam when completed would be sufficient to build a four-lane highway entirely across the United States. The reservoir ultimately to be created on the Columbia River will have a length of 151 sq. mi., a surface area of 128 sq. mi., and a capacity of 10,000,000 acre-feet, sufficient to supply 2,000 gallons of water to every inhabitant in the world or 25,000 gallons to every inhabitant of the United States. The upper 80 ft. of depth, with a capacity of 5,000,000 acre-feet, will be used for the regulation of the river for the benefit of power production, irrigation, and navigation improvement from The Dalles, Ore., to the Pacific Ocean. The reservoir can be filled in two months with the average flow of the Columbia River which is second in size in this country to the Mississippi River. The river flows 750 miles to the Pacific Ocean and in this distance falls 1,300 ft. and has a potential power for economic development far greater than that of any other river in the United States. The long-range plan of the Army Engineers for its development includes the construction of ten dams which will utilize 92 per cent of this potential power. The present dam is the largest and most important in this plan. It utilizes 27 per cent of the total available fall of the river and regulates the flow to increase the firm power available at the other sites one of which is 40 miles above Portland where Bonneville Dam is now being constructed.

The ultimate Grand Coulee project, for which only a small portion of the necessary funds have been appropriated, includes: the dam on the river to raise the water level 355 ft.; the power plant at the dam to generate 2,500,000 horsepower of electrical energy for pumping and commercial use; the pumping plant for raising 16,000 cu. ft. of water per second a vertical distance of 280 ft. into the Grand Coulee, a solid granite canyon 600 to 800 ft. deep occupied

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temporarily by the river when its main channel was blocked by an advancing glacier; and the Grand Coulee Reservoir to be formed by constructing a dam at each end of the Grand Coulee, creating a storage basin with a usable capacity of 340,000 acre-feet to regulate the flow of water to irrigate a tract of 1,200,000 acres in central Washington of what is said to be the finest body of undeveloped land in the world.

The dam is being built in numerous vertical columns or blocks keyed together and varying in size from about 50 ft. square in plan to 25 ft. by 34 ft., the joints being filled with cement grout under pressure after the concrete has cooled and the resultant shrinkage has taken place. The concrete in the dam is cooled by water circulated through a system of closely spaced one-inch pipes embedded in the concrete and having a total length of 2,000 miles. A spillway 1,650 ft. long located in the center of the crest of the dam, and having a capacity of 1,000,000 cu. ft. per second, is provided to permit the excess flow of the river to pass over the dam.

The estimated cost of the ultimate development is \$178,790,000 for the dam and power plant and \$197,841,000 for the irrigation system, a total of \$376,631,000 or about that of the Panama Canal. The income from the sale of power will be used for operation and maintenance and for the repayment to the United States of the cost of the dam and power plant and half of the cost of the irrigation works. The present contract calls for the placing of 4,200,000 cu. yd. of concrete, 45 per cent of which had been placed at the close of the year.

Alcova and Seminole Dams.—These dams are being constructed on the North Platte River near Casper, Wyoming, as a part of the Casper-Alcova Irrigation Project described in *THE AMERICAN YEAR BOOK*, 1935, p. 662. Alcova Dam, a rolled-fill earth dam about 230 ft. high with a volume of 1,500,000 cu. yd., was about 60 per cent completed at the close of the year. It is primarily a diversion dam but will create a reservoir

with a storage capacity of 160,000 acre-feet. Construction has progressed on Seminole Dam, a concrete arch structure 260 ft. high with a volume of 163,000 cu. yd. which will create a reservoir with a capacity of 910,000 acre-feet. At the close of the year, the excavation for the diversion and spillway tunnels was completed and foundation excavation about one-fifth completed. The placing of concrete is scheduled to start in May, 1937.

Parker Dam.—Excavation for this structure, which is a 320-ft. concrete arch dam being constructed by the U. S. Reclamation Bureau for the Metropolitan Water District of Southern California across the Colorado River 155 miles below Boulder Dam to divert water into the Colorado River Aqueduct for the water supply of Los Angeles, was about 40 per cent completed at the close of the year and the placing of concrete is scheduled to begin in July, 1937.

Bonneville Dam.—This project as a whole was about two-thirds completed at the year-end and the forecast for the date of completion is June 30, 1938. It is located on the Colorado River 40 miles east of Portland, Ore., at a point where the stream is divided into two channels by Bradford Island. An overflow dam is being constructed across the north channel and a power house and ship lock close the south channel. The dam is of the overflow gravity-section type on which are superimposed reinforced concrete piers 10 feet thick which will support 18 vertical lift steel gates, each of which is 50 ft. wide. A service roadway will be constructed across the dam on top of the piers. The dam is 1,090 ft. wide and the height above the lowest foundation is about 170 ft. The ultimate power installation will be 580,000 horsepower. Studies made by the Oregon Planning Board indicate that by 1945 Oregon will have use for half of this power, it being assumed that the power will be divided equally between Oregon and Washington. The ship lock is designed to accommodate ocean-going vessels. Its length is 500 ft., width

76 ft., and depth over the sills at low water 24 ft. The vertical lift at extreme low water will be 63 ft. which is greater than that of any lock yet built. Since the Columbia River and its tributaries provide the spawning ground for salmon and other fish upon which a fishing industry with an annual product of \$10,000,000 is based, it has been necessary to provide fishways costing about \$3,500,000 to enable fish to pass the dam. The project's cost is estimated at \$45,000,000 and was authorized by Congress in August, 1935.

Fort Peck Dam.—This dam, which will far exceed in volume any dam yet constructed, is a hydraulic fill, earth embankment 250 ft. high, 9,000 ft. long, with a volume of 100,000,000 cubic yards. The earth is being excavated from borrow pits in the stream bed above the dam by four section dredges, pumped through a 28-in. pipe line, and deposited on the dam at the rate of about 1,800 cu. yd. per hour for each dredge. On Nov. 1, the dredging operations stopped for the winter, due to severe freezing weather, with a total of 50,000,000 cu. yd. of material placed or one-half the total volume of the dam. During the past season of 28 weeks, the filling rate averaged 1,000,000 cu. yd. per week. The maximum static head under which the pumps worked was 230 ft., which is said to be the greatest on record for hydraulic earth moving. This project is located on the upper reaches of the Missouri River at Fort Peck, Mont. Its primary function is flood control but it will also be used for irrigation, power and to extend navigation, with a 9-ft. minimum depth, as far up the river as Sioux City, Ia. The minimum flow of the river at Kansas City will be maintained at 30,000 cu. ft. per second. The reservoir created by the dam will be 180 miles long, will have a maximum width of 16 miles and a capacity of 20,000,000 acre-feet or two-thirds that of Mead Reservoir created by Boulder Dam, and twice that of Grand Coulee Reservoir. The total cost of the project is estimated at \$83,000,000. The designs were pre-

pared by the Corps of Engineers of the U. S. Army and the work is being carried out under its direction.

Muskingum Valley Dams.—The project for flood control in the Muskingum Valley in Ohio at the end of the year was about 80 per cent complete, about 50 per cent of the work having been done during 1936. Of the 14 dams included in the project, Charles Mill, Tappan, Mohicanville, and Piedmont Dams were completed during the year, and the remaining ten dams range from 60 to 90 per cent complete. The total cost of construction is now estimated to be about \$38,000,000. The work is being done under the supervision of the Corps of Engineers of the U. S. Army with headquarters at Zanesville, O.

Upper Mississippi River Locks and Dams.—The construction of locks and dams by the Corps of Engineers of the U. S. Army at 26 points along the Mississippi River between St. Louis and Minneapolis is to provide a navigable channel with a minimum depth of 9 ft. between Minneapolis and the Gulf of Mexico. Work on this project progressed rapidly during the year. On the stretch of river between Minneapolis and the mouth of the Wisconsin River there are 10 locks and dams on which about 73 per cent of the work was completed at the close of the year. Between the mouth of the Wisconsin River and Clarksville, Mo., there are 13 locks and dams about 67 per cent complete, and it is estimated that all of the work will be completed by the close of 1938. Between Clarksville, Mo., and St. Louis there are three projects under way, involving the construction of twin locks and dams at Alton, Ill., a lock at Cap au Gris, Mo., and a lock at Clarksville. Considerable damage was done to the partially completed structures on the Upper Mississippi River by the severe floods during the spring months. The total cost of this entire development is estimated at \$150,000,000.

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Tennessee Valley Dams.—The Tennessee Valley Authority Act passed by Congress in 1933 and amended in 1935 provides for the unified development of the Tennessee River System. The most conspicuous objective is the improvement of the river to provide a navigation channel with a minimum depth of 9 ft. from its mouth at Paducah, where it joins the Ohio River, to Knoxville, Tenn., a distance of 650 miles, which will be superior to any river navigation above tidewater now existing in this country. Closely coordinated with navigation improvement are the plans for flood control in the valley itself and along the Ohio River, of which the Tennessee River is the largest tributary, and the Mississippi River. The Tennessee River contributes nearly one-fifth of the water at the flood peaks of the Mississippi River just below Cairo so its control is an important factor in controlling the Mississippi River floods. The water power available at each dam due to the difference in the water surfaces above and below the dam is being developed to augment

the present supply of electrical energy in this area and to produce an income which will partially reimburse the government for the expenditures in the Valley. In planning the development and in its operation, power is considered as secondary to navigation and flood control. Other phases of the unified plan include soil conservation, land use, and social and economic planning.

The basic features of the plan for the unified development of the Valley are 12 dams which have been completed, are under construction, or are recommended for the main river and its tributaries. Various characteristics of the nine dams on the main river are shown in the following table which includes the distance in river miles of each dam from the mouth of the river at Paducah, the length of pool in miles, the difference in elevation of the normal water levels above and below each dam in feet, the ultimate generating capacity in horsepower, the approximate cost in millions of dollars and the present status:

DAMS ON TENNESSEE RIVER

Name of Dam	Dist. (mi.)	Pool (mi.)	Head (ft.)	Horse power	*Cost in million dollars	Present Status
Gilbertsville....	23	185	46	342,000	60	Recommended
Pickwick Landing	207	52	54	272,000	36	Started March, 1935
Wilson.....	259	16	92	593,000	..	Completed 1925
Wheeler.....	275	74	50	342,000	32	Completed Nov. 1936
Guntersville....	349	82	40	109,200	30	Started Dec. 1935
Hales Bar.....	431	40	34	58,700	**	Completed 1913
Chickamauga...	471	59	44	214,000	32	Started Jan. 1936
Watts Bar.....	530	74	62	200,000	31	Recommended
Coulter Shoals..	604	44	66	72,000	20	Recommended

* Not including power generating facilities.

** Privately owned.

These dams are so located that the pool created by each dam extends up the river to the next dam and provides a minimum navigable depth of 9 ft. A lock is provided at each dam to permit boats to pass. The dams on the tributaries are for the storage of flood waters to reduce flood destruction, to maintain the water level at the shipping terminals,

to increase the low flow and thereby maintain the 9-ft. minimum depth required by navigation, and to maintain a more uniform flow for improving the power characteristics at all of the dams. Various characteristics of the three dams on the tributaries are given in the following table together with the cost exclusive of generating equipment.

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DAMS ON TENNESSEE TRIBUTARIES

Name of Dam	Name of Tributary	Height (ft.)	Reservoir Capacity*	Present Status	Cost Million Dollars
Norris.....	Clinch	265	3,350,000	Completed July, 1936	36
Fontana.....	Little Tenn.	450	1,300,000	Recommended	29
Fowler Bend.....	Hiwassee	300	440,000	Started July, 1936	15

* Acre-feet.

The total storage behind the dams on the main river and its tributaries, according to the recommended plan, is 7,000,000 acre-feet which can be increased ultimately to 10,000,000 acre-feet. The program now under way and recommended would require appropriations of \$35,000,000 a year for between six and seven more years in addition to investments which may prove necessary for generating electric power at other than Norris, Wheeler and Pickwick Landing Dams. The date set for completion is the end of 1943. The total cost for the completion of the dams and related works now under way is estimated at \$185,000,000. Total expenditures by the Tennessee Valley Authority to July 1, 1936 were \$100,000,000. The total cost of dams recommended in the unified plan but not yet authorized is about \$150,000,000, making the total cost of work now under way or recommended about \$335,000,000. This is about twice the cost of the Boulder Dam project including the All-American Canal; about ten per cent less than the proposed ultimate development of the Grand Coulee project and about 10 per cent less than the cost of the Panama Canal.

San Gabriel Dam.—After the delay caused by revision of plans as mentioned in the THE AMERICAN YEAR BOOK, 1935, p. 623, progress on San Gabriel Dam No. 1 has been rapid. This dam will be 320 ft. high above the stream bed and 375 ft. high above its rock foundation, will contain 10,500,000 cu. yd. of compacted or sluiced earth and rock fill, will create a reservoir with a capacity of 56,000 acre-feet, at a cost of about \$12,000,000. It is expected that the

dam will be completed in 1938. It is being constructed by the Los Angeles County Flood Control District for the regulation and conservation of flood waters in San Gabriel Canyon. San Gabriel Dam No. 2 was completed during 1935 except for the construction of a proposed permanent facing. It is a rock dam with a height of 255 ft., a volume of 1,200,000 cu. yd. and a storage capacity of 13,000 acre-feet.

Quabbin Dike and Dam.—Boston's new Quabbin reservoir water supply system, whose capacity is to be 1,270,000 acre-feet, requires the construction of Quabbin Dike which is a hydraulic earth fill dam 135 ft. high and 2,140 ft. long with a volume of 2,100,000 cu. yd.; and Quabbin Dam which is a hydraulic earth fill embankment 165 ft. high and 260 ft. long with a volume of 3,850,000 cu. yd. The dike closes a saddle between two hills along the rim of the proposed reservoir and the dam is located on the Swift River near Enfield, Mass. Each of these structures has a concrete cutoff wall extending from the bottom of the impervious earth core through a deposit of glacial till into impervious strata. These were sunk by the pneumatic caisson process. Work is scheduled for completion of this project in 1938, the total cost being estimated as \$65,000,000. The work is being done under the direction of the Boston Metropolitan District Water Supply commission.

Hawks Nest Dam.—This is a concrete overflow structure 836 ft. long constructed across the New River in West Virginia to divert water into a pressure tunnel leading to the hydro-electric power plant

with a present capacity of 120,000 horsepower operating as a run-of-the-river plant located three miles below the dam and operating under a head of 163 ft. The project was placed in service July 9 by the Electro Metallurgical Company.

BRIDGES

San Francisco-Oakland Bay.—

This bridge, the most outstanding in the world today, was opened to traffic Nov. 12 after the remarkably short construction period of less than 3½ years. It is supreme among bridges because of its great length of 8¼ miles, 3½ miles of which are over water; its foundations which reach a depth of 242 ft. below the water level; its twin suspension bridges with center spans of 2,310 ft. which are exceeded only by the 3,500-ft. span of the George Washington Bridge over the Hudson River at New York City and the 4,200-ft. span of the Golden Gate Bridge being constructed only a short distance from the Bay Bridge; its cantilever span of 1,400 ft. which is the longest in the United States and third longest in the world; and its cost of \$77,600,000 which is the greatest of any bridge ever erected. The bridge is divided by Yerba Buena Island into two nearly equal parts known as the West Bay Crossing, composed of the twin suspension spans, and the East Bay Crossing, consisting of the cantilever span and 23 truss spans with lengths varying from 509 ft. to 291 ft. and several girder spans. The bridge has two decks. The upper deck provides for six lanes of passenger automobile and bus traffic and the lower deck carries two electric interurban tracks and a roadway for three lanes of truck traffic. Traffic on both the upper and lower decks passes through Yerba Buena Island in a tunnel 540 ft. long with a width of 65 ft. 6 in. and a height of 52 ft. 8 in., giving it the largest cross section of any tunnel in the world. The suspension spans are supported by two cables 28¾ in. in diameter, each of which is made up of 17,464 wires about as thick as a lead pencil, the total length of wire required

being 71,000 miles. The bridge provides a minimum clearance of 185 ft. above the water and the suspension towers rise to a maximum height of 519 ft. above the water. The bridge was constructed for the California Toll Bridge Authority established by California in 1931. The Reconstruction Finance Corporation purchased \$56,000,000 worth of bonds to finance the bridge proper and agreed to purchase \$15,000,000 worth more to finance the electric railway system over the bridge. The State of California loaned \$6,500,000 from the gas tax to build the approaches. The tolls are expected to pay for the bridge in 20 years after which it will be free. The Golden Gate International Exposition to be held at San Francisco in 1939 is to be located on a man-made island adjoining Yerba Buena Island. (For further information see THE AMERICAN YEAR BOOK, 1933, 1934 and 1935.)

Golden Gate Bridge.—Construction is progressing rapidly on this gigantic bridge which is to be completed in 1937. The spinning of the cables, which sets the pace for all other parts of the work, was completed in December and six cable-wrapping machines started encasing the parallel wires of the cables in a tight cover of wire. A feature of the erection is the net which has been placed under the entire structure at great expense to prevent the drowning of workmen who fall from the bridge. This bridge has a central span of 4,200 ft. which is 700 ft. greater than that of the George Washington Bridge across the Hudson, its nearest rival. Its steel towers are 746 ft. high above the water or nearly as high as the Woolworth Building in New York City. They are the tallest structures west of New York City. Its two main cables are 36½ in. in diameter or one-half inch larger than the four main cables of the George Washington Bridge. They are each made up of 27,572 parallel wires about the size of a lead pencil. The total length of wire in the cables is 80,000 miles. The bridge deck has a width of 90 ft. which provides for six lanes of vehicular traffic and two

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10½-ft. sidewalks. The vertical clearance above the water is 200 ft. at the center. The length of the bridge proper is one and one-fifth miles. The bridge is being built by the Golden Gate Highway District at a cost of \$32,000,000 and is to be financed by the collection of tolls. (For further information see THE AMERICAN YEAR BOOK, 1933, 1934 and 1935.)

Triborough Bridge.—On July 11, 1936, the Triborough Bridge connecting the boroughs of Manhattan, Bronx and Queens of New York City was opened to traffic. The structure spans Hell Gate with a suspension span of 1,380 ft. and loaded backstay spans of 705 ft. The total length of the bridge, including approach spans, is 3½ miles. It provides for eight lanes of highway traffic on a single deck. One important part of the bridge is the lift span over the Harlem River which has a span of 310 ft., a width of 75½ ft. center to center of trusses and provides an 8½-ft. sidewalk on the outside of each truss. Considering its roadway area of 20,000 sq. ft., it is said to be the largest vertical lift bridge ever built, although its span is exceeded by other bridges of this type, the maximum span being the 544-ft. span of the Buzzards Bay Bridge across the Cape Cod Canal. The total cost of this project was \$60,000,000. (See THE AMERICAN YEAR BOOK, 1935, p. 627.)

Henry Hudson Bridge.—On Dec. 12, the Henry Hudson Parkway in New York City was opened to traffic. An important feature of this parkway is the Henry Hudson Bridge which, with its main span of 800 ft., is the longest-span hingeless arch bridge in the world as well as the longest span plate girder arch bridge. Its total cost was \$3,000,000.

St. Charles, Mo., Bridge.—The steel cantilever single-track bridge with a central span of 624 ft. constructed across the Missouri River at St. Charles, Mo., by the Wabash Railway Company, was opened to traffic on Oct. 13. The bridge has a total length of 1½ miles and replaces the one built in 1871 at a site one-half mile upstream. The struc-

ture was financed by a P.W.A. loan of \$2,350,000.

Chicago River Bascule Bridge.—The largest double-leaf bascule bridge in the world is being constructed on Chicago's Outer Drive along the shore of Lake Michigan over the mouth of the Chicago River. It has a span of 264 ft. between trunnions and is 108 ft. wide.

Galveston Causeway.—A new causeway across the West Bay at Galveston is being constructed to relieve the congestion on the present structure which is 500 ft. northeast of the new structure and parallel to it. The new causeway is 13,200 ft. long and includes 9,600 ft. of trestle bridge including a double-leaf bascule bridge which provides a clear opening of 105 ft. at the Intercoastal Canal. A 40-ft. roadway and two sidewalks are provided.

Pan-American Bridges.—Contracts were awarded in September by the U. S. Bureau of Public Roads for the fabrication and erection of the steel superstructure of three bridges on the Pan-American Highway for \$388,000. One is a cable suspension bridge with a center span of 400 ft. and a length of 730 ft. to be constructed over the Chirigui River in Panama; one with two suspension spans 330 ft. long and a total length of 930 ft. is to be located across the Choateca River in Honduras, and one has an eye-bar suspension span 240 ft. long and a total length of 440 feet which is to cross the Tamaculaka River in Guatemala. All of the bridges have 20-ft. roadways. The bridges are being constructed according to treaties between the United States and the countries concerned whereby this country furnishes the superstructures and the country in which the bridge is located furnishes the substructure. The highway will not be opened for through traffic for some time but the bridges are so located as to be valuable for local use. It is expected that eventually there will be a highway through Central America to South America from the United States.

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CANALS, AQUEDUCTS, AND TUNNELS

All-American Canal.—Good progress has been made during the past year on construction of the All-American Canal, a \$38,500,000 project which when completed will supply Imperial and Coachella Valleys in California with main irrigation canals located entirely within the United States and replacing the present main canal to Imperial Valley which runs for many miles in Mexico. The main canal to Imperial Valley which is now under construction is 80 miles long and the branch to Coachella Valley for which no appropriations for construction have yet been made will be 130 miles long. Work is now actively under way on the canal to Imperial Valley. To date 54 miles of this canal have been completed, 47,100,000 cu. yd. having been excavated. Good progress is being made on the construction of Imperial Dam, a 31-ft. hollow reinforced concrete structure which is the diverting structure on the Colorado River; the desilting works, and several large structures along the first 20 miles of canal. Work is now being carried on under 12 construction contracts with a total value in excess of \$12,000,000, and the project is 42 per cent complete.

Florida Ship Canal.—This project, officially known as the Atlantic Gulf Ship Canal, which involves the building of a 195-mile sea-level ship canal across the northern part of the Florida peninsula at a cost of about \$150,000,000, was described in *THE AMERICAN YEAR BOOK*, 1935, p. 631. During the year it had a rather turbulent history. Construction started with the initial allotment of \$5,000,000 from relief funds made by President Roosevelt in September, 1935. There was considerable opposition to the project from the first because of the doubt as to its economic value and the fear that it would have an adverse effect on the ground water supplies of the southern peninsula which are a chief source of potable water. A board of engineers appointed to study the ground water situation reported early in the year that the construction of the canal

would have only local effects on the ground water supply. In 1933, a board of army engineers considered the possible canal routes across Florida and Georgia and reported that there was no economic justification for a canal across northern Florida but recommended that, if a canal were built, it should be a lock canal on the site which was chosen for the present canal. Shortly after this report was rendered another board, selected by the Public Works Administration, reported that the benefits would justify the expenditure. Since P.W.A. could not undertake projects which were not self-liquidating, the President appointed another board to determine whether the canal could be made self-liquidating by charging toll. This board reported that the savings in transportation cost which could be made by the construction of the canal were small and that the toll would have to be so low that the project would not be self-liquidating. This report made the project ineligible for P.W.A. funds. In September, 1935, the President allocated \$5,000,000 of relief funds to start work on the canal but stated that Congress should pass on the project. Early in the year Congress declined to provide further funds. Construction continued during the first half of the year but ceased when the relief funds were exhausted. Late in the year a special board of officers of the U. S. Engineers appointed to re-study the project reported that the construction of the canal is justified in public interest. The future of the project is uncertain but will probably be decided by Congress during 1937.

Colorado River Aqueduct.—This project involves the expenditure of \$220,000,000 by the Metropolitan Water District of Southern California for bringing 1,500 cu. ft. of water per second to Los Angeles and the surrounding area from the Colorado River at Parker Dam, now under construction 155 miles below Boulder Dam, through an aqueduct 241 miles long. This water is raised 1,600 ft. by five pumping stations with power transmitted from Boulder Dam.

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During 1936 the main aqueduct reached 62 per cent of completion, the power lines 65 per cent and the distribution system 24 per cent. Of the 92 miles of 16-ft. tunnels on the main aqueduct, 87 miles have been excavated and 67 miles completed with lining. The 18-mile East Coachella Tunnel is the longest on the aqueduct and one of the longest in the world. The diversion of the Colorado River to permit the construction of Parker Dam has been effected and the excavation for the foundations of the dam is about 25 per cent completed. This requires excavation to a maximum depth of 250 ft. About 8,500 persons are now employed on the project which is under the direction of the U. S. Bureau of Reclamation.

Midtown Tunnel.—The Midtown Hudson Tunnel, under the Hudson River at 39th Street, New York City, on which work started in 1934, is expected to be ready for traffic late in 1937. This is the south tube of a project including two tubes and will carry one lane of traffic in each direction until the north tube, on which construction started at the end of 1936, is opened. It is planned to complete the second tube in time for the New York World's Fair in 1939. These tunnels are about 6,000 ft. long with an overall diameter of 31 ft. They are being constructed by the Port of New York Authority at a cost of \$47,000,000 for the south tunnel and \$33,000,000 for the north tunnel, making a total cost of \$80,000,000 for the project which was financed by P.W.A. loans and grants.

East River Tunnel.—Work started in October on the vehicular tunnel under the East River from Manhattan to Queens in New York City. The Manhattan entrance will be at 2nd Avenue between 36th and 37th Streets and the Queens entrance at the intersection of Borden and Vernon Avenues. The Tunnel, which will be similar to the Holland and Midtown Tunnels, consists of two cast-iron tubes 31 ft. in diameter with roadways 21 ft. wide and a clear headroom of 13½ ft. The ventilating system will be similar to that of the Holland Tunnel. The length of the

tunnel from portal to portal will be 6,400 ft. The tunnel is being constructed for the New York City Tunnel Authority at a cost of \$58,000,000 provided by a grant of \$11,000,000 and a loan of \$47,000,000 from the Public Works Administration.

New York Subways.—Contracts were awarded in November for the fourth section of the Sixth Avenue Subway from 47th to 53rd Streets in New York City. Construction is already under way on the first three sections which extend from 27th to 47th Streets and bids were opened in December for the construction of the fifth section which extends from 27th to 18th Streets.

CENTRAL VALLEY PROJECT

The Central Valley Project in California, which was described in *THE AMERICAN YEAR BOOK*, 1935, p. 624, embodies a plan for the conservation, distribution and utilization of the water resources of the Sacramento and San Joaquin Rivers to provide urgently needed water supplies for existing agricultural, industrial and municipal developments in the valleys of these rivers, and in the upper San Francisco Bay region having a population of 900,000. An average annual loss of 19,000,000 acre-feet of water into the ocean will be partially diverted to useful purposes at an estimated cost of \$170,000,000 by a project which was approved by the President in December, 1935 and is being carried out under the direction of the U. S. Bureau of Reclamation. The storage development on this project will have a capacity which exceeds the combined capacity of California's 750 existing reservoirs. Preliminary work is under way. This consists of the investigation of six possible sites for the Kennett and Friant Dams by means of shafts, tunnels, and core drilling; relocation surveys of railroads and highways whose moving was made necessary by this project; and final location surveys for 60 miles of canal. Plans and specifications have been prepared for the Friant Dam which is

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to be a gravity-section concrete dam 252 ft. high with a volume of 1,328,000 cu. yd., creating a storage capacity of 400,000 acre-feet at a cost of \$15,000,000.

SYRACUSE TRACK ELEVATION

For nearly 100 years the trains of the New York Central R. R. have passed through Syracuse, N. Y., on Washington Street, crossing all of the main business thoroughfares. In the early days with only occasional trains and with no street congestion due to automobiles, the situation was not so serious as more recently when there have been 100 trains a day including the Empire State Express and the Twentieth Century Limited passing through the business district and crossing 16 busy streets at grade in a distance of a mile and a quarter. Serious, but less objectionable, was the traffic of the West Shore R. R., four blocks to the north of the New York Central R. R., which crossed 24 streets at grade within a distance

of 3½ miles. This situation has been remedied, after years of agitation, by providing elevated tracks for a distance of five miles along the route of the West Shore Railroad for the use of both roads. Thirty-one bridges were required on the project. Train operation over the new location started in September.

PUBLICATIONS

Current news concerning structural engineering projects may be obtained from the *Engineering News-Record*, the *Western Construction News*, *Construction Methods* and *The Reclamation Era*, all of which have been useful in the preparation of this review. The *Annual Report* of the Chief of Engineers of the United States Army and the *Annual Report* of the Bureau of Reclamation present detailed information concerning the work of those organizations for each year ending June 30, but do not become available until several months later.

MECHANICAL ENGINEERING

By DONALD B. PRENTICE

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GENERAL

With the improvement in business conditions, especially during the second half of 1936, appropriations for research both in industrial and in university laboratories were increased. Research committees of the American Society of Mechanical Engineers enlarged their programs. For example, an extended study of lubrication has been initiated to cover many fundamental physical and mechanical problems. The results of these augmented activities will appear in reviews of progress of future years. For 1936, however, progress was greater than during the recent depression years and some investigations of major importance have been completed. As noted in 1935 the automobile manufacturers continued to lead the economic recovery, but better business has spread to many industries.

MACHINE TOOLS

The machine tool builders continue to profit from the rehabilitation and modernization of manufacturing plants. In at least a few cases there is a serious shortage of skilled workmen for machine tool construction. Some idea of the social effects of this movement can be gained from a statement made by an administrative officer of one of the largest companies in the electrical field that his organization is producing as large a quantity of goods with 13,000 employees as it did in 1929 with 25,000. Some of the increase in per capita output is, of course, due to improved management, but the machine tool builders have stepped up production with faster equipment and higher cutting speeds. Practice during the year led to much greater familiarity and more

successful results with the cemented carbide cutting tools.

Of importance to machine builders may be the results of tests on surface fatigue of cast iron which were continued during 1936 at the Massachusetts Institute of Technology. To date the most durable alloy of cast iron tested is one with about 2 per cent nickel heat treated as follows: heat to 1550° F. and hold until thoroughly heated; quench to 600° F. in a salt or lead bath; heat until uniformly heated and quench in boiling soda water. This metal has a Brinell hardness of 245—260 and a uniform, fine-grained structure. A worm of this material ran three times as long under similar test conditions as a hardened and ground steel worm. In connection with this research some tests were made to determine the cause of corrugations or waves on steel rails. It was found that they were due to the plastic flow of the surface of the material and were greatly accentuated by the sliding which takes place on curves.

Under the guidance of an American Society of Mechanical Engineers committee further research has been carried on by fatigue tests on mechanical springs but the results have not yet been published.

STANDARDS

During 1936 standards have been completed and approved for brass fittings for flared copper tubes, socket set screws and socket-head cap screws, pipe plugs, circular and dove tail forming-tool blanks, chucks and chuck jaws, lathe spindle noses.

Other standards nearing completion and approval are for large rivets, twist drills, machine tapers, steel welding neck flanges, plain washers, pipe threads (an expansion of earlier standards). Many other standards are in process of development by committees of experts. The adoption of standards year after year and of almost infinite variety doubtless seems unnecessary to non-technical individuals. Standards are, however, of great importance in specifications, in lowering production costs through reduction or elimination of variations,

in promoting inter-changeability, in saving experimentation in new designs, and often in the matter of safety.

STEAM POWER GENERATION

Watt Bicentennial.—Of great interest to all who are connected in any way with the generation or use of steam power was the Watt Bicentennial, celebrated in the first months of 1936. In this country formal programs of some length were arranged at Lehigh University and under the auspices of the Franklin Institute, while shorter celebrations were held in many engineering schools and societies. While James Watt did not originate the steam engine his inventive genius gave the world its first engine of reasonable speed and introduced the idea of economy through expansion.

Boiler Studies.—During the year further study was given to the absorption of radiant heat in boiler furnaces, to condenser tube corrosion and to creep in metals under high and low temperature service. Investigation has been commenced in the field of high pressure steam of the reactions between steam and metals. A temperature range of 800° to 1400° F. will be studied, and it is expected that about 20 different alloys will be used.

The report on orifice coefficients for fluid meters has been completed and the A.S.M.E. committee is now engaged in research on coefficients for flow nozzles. The term "enthalpy" for the thermodynamic function commonly called "total heat" or "heat content" has been formally adopted. Revisions of the fusible-plug requirements for boilers have been adopted by the Boiler Code Committee of the A.S.M.E. but will not be published until after a series of tests at the U. S. Bureau of Standards has been completed.

Turbines.—No new mercury vapor boiler and turbine units have been installed but reports from the few in operation continue to show high efficiency and no serious difficulties. There is a continued tendency to install so-called superposition turbines

on the high pressure ends of existing power plants. This involves the use of steam pressures in the range from 1,250 to 1,800 or 2,000 lbs. per sq. in. with steam temperatures of about 900° F. It is economical for the superposed turbines to run at high speeds but these involve high windage friction and ventilation losses in the generators. These losses can be reduced by cooling the generators with hydrogen, a gas of low density, instead of with air. Several 30,000 to 60,000 Kw. units have been built to take advantage of this saving.

Cincinnati West End Station.—

A typical installation of the high pressure, superposed type is that of the Cincinnati West End Station. System loads at the end of 1935 had increased to about 10 per cent above the previous peak of 1929 and new generating capacity was required. Engineering studies led to the decision to install a superposed unit of 35,000 Kw. to operate at a pressure of 1,200 lbs. per sq. in. and a temperature of 900° F. The exhaust from this unit is at 260 lb. per sq. in. which is the operating pressure for the older units. Space for the three boilers and new turbine was secured in the existing plant by the removal of four old boilers. The new boilers have a steam capacity of 350,000 lbs. per hr., burn pulverized coal, and are designed for a working steam pressure of 1,450 lbs. per sq. in. The superheaters will produce a maximum temperature of 925° F. There are four burners across the front of each boiler arranged for vertical firing, which will maintain the ash above the fusion point, 2800° F. The furnace is arranged for continuous tapping of the slag. Heat liberation in the furnace, when steam is being generated at 350,000 lbs. per hr., is at the rate of 56,000 Btu per cu. ft., four times as great as the rate of new furnaces a decade ago.

The coal pulverizers are supplied with primary air from the air heater, which in addition to carrying the coal from the mill supplies sufficient heat to dry the coal. This makes it possible to pulverize the coal without predrying. Fly ash will be recovered

from the flue gases by an electrostatic system.

The turbine has an impulse element of the Curtis type followed by 13 stages of reaction blading. The rotor, which operates at 3600 R.P.M., gives the blades a peripheral speed of 532 ft. per sec. The rotor is a forging of nickel-chromium-molybdenum steel and runs in a casing of cast carbon-molybdenum steel. Blades are made of stainless steel.

Instead of extracting steam from the main unit for feedwater heating turbine driven boiler feed pumps are used and the exhaust from these turbines at 10 lb. per sq. in. and extractions at 30 lb. per sq. in. will heat the water. Additional heating will be done by steam at 260 lb. per sq. in. as exhausted from the new turbine. The control arrangement provides for by-passing boiler steam around the superposed unit in case of outage and delivering it through a pressure reducing valve and desuperheater to the older units.

This somewhat detailed description of the Cincinnati installation is presented as a picture of steam power practice in 1936. Other plants have been built to use higher pressures and, of course, there are many of greater capacity. But the remodelled West End Station is an example of modern, not radical, design.

Power and Heating Loads.—Further study is being given to the efficient combinations of power and heating loads and some interesting exchanges have been established between industrial and utility companies. In the summer when the factory heating load is light an industrial company may supply power to the utility to the advantage of both, especially if the utility has a hydro-electric generating station in its system for the low heating demand often corresponds to low water conditions.

Colloidal Fuel.—One difficulty with the use of colloidal fuel (pulverized coal suspended in oil) has been the separation of the coal from the oil due to sedimentation, a process which will commence if the mixture stands for a few weeks. It has been

found that the addition of as little as one-half of one per cent of soap will greatly delay, if not entirely prevent, this sedimentation. A mixture of 40 per cent coal with 60 per cent oil, the coal having been pulverized so that 85 per cent of it was less than .0025 in., stood for five months without noticeable separation. The colloidal fuel has the advantages of pump handling and a lower cost than oil.

AVIATION

The field of aviation lost one of its greatest inventors during 1936 in the death of Juan de la Cierva. The researches of this Spanish engineer with helicopters in an effort to solve the two major problems of airplanes led to the development of the autogiro. This modification of the airplane by the use of a horizontal, long-armed, windmill-like rotor above the fuselage solved the problem of a reasonably safe landing in case of stalled motors and the problem of taking-off and landing on a restricted area. The autogiro principle has not been able to provide the carrying capacity or the speed necessary for successful commercial competition with other types of planes, but it has made a remarkable record for safe operation. The death of Juan de la Cierva was especially tragic as it resulted from the crash of a British plane due to causes for which the inventor's genius had found solutions in his own type of construction.

The most remarkable performances of the year in the air have been the continued regular crossings of the south Atlantic by the old reliable *Graf Zeppelin* and the inauguration of 48-hour service from the United States to Germany by the *Hindenberg*. Ten round trips were made without mishap of any kind, with comfort for the passengers and with almost railroad precision. Several serious accidents in this country on commercial lines using heavier-than-air machines have accentuated the remarkable performances of these two dirigibles. It is expected that the service to and from the United States will be increased next year.

For airplanes some research has been done on the effects of surface roughness at high speeds. It has been shown that asperities greater than .001 in. must be avoided for speeds of 200 miles per hour and above. This indicates that doped fabric finish will be superseded by rolled aluminum sheet or other equally smooth surfaces for first-class performance.

TRUCKS AND BUSES

There was some further development during the year in the application of Diesel engines to trucks and buses but no passenger cars with this type of power plant are on the market. This is not a change to be expected in the immediate future. Nor will the arrangement with motor in the rear be applied to passenger cars in the next year or two although its advantages have been demonstrated in numerous bus installations. The American public is conservative and prefers the conventional. The introduction of airflow models, for example, was not received with overwhelming enthusiasm.

Air conditioning of buses, ambulances and private cars has received some attention but there are few installations as yet. Improvements in automobiles for the year have been chiefly in minor details, as in the alligator type hood, door latches, etc.

RAILROADS

The increased operation of high-speed trains has introduced some serious problems for the designer. The demand for light weight requires the use of high working stresses which has led in the case of parts subject to reversing stresses to mileage limitations. To prevent any danger of failure due to fatigue, certain parts, such as axles, will be replaced after the prescribed number of miles have been run.

MATERIALS

Super-Pure Aluminum.—The production of super-pure aluminum has now been reduced to a commercial basis. The new product is 99.99 per cent pure (compared to

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99.6 per cent formerly). It is softer, a better conductor of electricity, and better withstands corrosive effects.

Wire Rope.—Research on wire rope at high speeds has proved that the slip is not serious but the higher tensions required are more important. Experiments have demonstrated that the lubricant in the fibre core has not prolonged the life of the rope except in so far as it has prevented or checked corrosion.

Small Parts.—A technique has been developed for producing small parts, such as bearings, from powdered metals by moulding or welding under moderate pressure. Copper and tin yield good results by this method.

Fibrous Glass.—Another product which has been developed in recent years is fibrous glass, much credit for which should go to the Owens-Illinois Company. The tensile strength is greater than that of silk, cotton or rayon and the material is produced in diameters from .00015 to .0125 in. The thread is formed by blowing the material through orifices by steam pressure at a speed of 50 miles per minute. The principal uses to date have been for insulation and air filters.

Resinous Adhesives.—A little known field in which interesting work has been done is that of resinous adhesives for use on metals. Adhesives have been produced with tensile strengths of 1,000 lbs. per sq. in. in the joint. One process is by drying at a little above room tem-

perature and another is by the use of heat sufficient to melt a dry thermoplastic adhesive. Experiments have shown that it is not necessary, as was formerly thought, for an adhesive to etch the smooth metallic surface in order to secure a strong joint.

Microporite, a new building material with certain distinct advantages, has been developed. It is a hydrated calcium silicate. It is light in weight, having voids of 75 to 80 per cent and yet these are so small as to be invisible under a microscope. The material weighs only 25 lbs. per cubic foot, has a compressive strength of about 1,000 lbs. per sq. in. and a tensile strength of 100 lbs. per sq. in. Its thermal insulating properties are excellent.

Non-Fusion Welding.—Reference should be made in this section on materials to a new method of welding without fusion which has been developed by Antonio Longoria of Cleveland, O. Without raising the temperature above 700°F. it is claimed that a weld strength can be secured equal to 99.9 per cent of the base metal. Edges to be welded are placed together, without pressure, and the weld is produced by the application of high frequency electric current. The action is called "molecular shock," and it is claimed that the bonds of the terminal molecules are broken and the two pieces welded without fusion.

ELECTRICAL ENGINEERING

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INTRODUCTORY

The field of electrical engineering may be divided into four parts; generation and distribution of electrical energy, manufacture of electrical devices, industrial use of electricity, and the communications industry. Almost every week during 1936 the generation of electricity in the United

States reached a new all time high. By the middle of November the weekly production was more than 2,169,000,000 kw.-hrs., which was 13 per cent higher than at the same time the year before, according to figures published by the Edison Electric Institute. This growing load is naturally creating a demand for more

generating equipment. By the end of March three of the largest manufacturers of heavy equipment reported that, since the first of the year, they had received orders for 200,000 kw. of steam turbines and generators which was enough to load their factories to nearly 50 per cent of capacity. At the end of the first nine months of 1936 the sales billed by one of the large manufacturers were 61 per cent above those for a similar period in 1935.

The prosperous outlook at the end of 1936 was partly due to general economic recovery and partly to the increased sales efforts of the utility companies. In the past year many new customers were reached through the extension of rural lines both by the Rural Electrification Administration and by private companies.

The end of the year found the public utility companies in legal controversy with the government on two different fronts. First, there was litigation under the Public Utility Act of 1935. Many of the leading holding companies refused to register with the Securities and Exchange Commission as provided in the Act. The Government chose as a test case its suit to compel the Electric Bond and Share Company to register, and held up all similar suits pending the decision on this case, which at the beginning of December had not yet reached the Supreme Court. The other point of controversy was the right of power plants built under the auspices of the Public Works Administration and the Tennessee Valley Authority to sell power in competition with utility companies. A Supreme Court decision upholding the right of the government to sell power generated at the Wilson Dam was regarded by the utilities as too narrow to be really decisive.

On March 20, 1886, the first alternating current distribution system in the United States was put in service in Great Barrington, Mass., by William Stanley. This year electrical engineers all over the country paid tribute to Stanley and his backer, George Westinghouse, whose vision

made possible the widespread use of electricity we enjoy today.

On Sept. 7 some 2,500 delegates to the Third World Power Conference were welcomed to Washington by Secretary of State Cordell Hull. The conference considered the engineering, economic, and managerial aspects of power. The question of public *versus* private ownership of electric generating and distributing equipment was discussed thoroughly by representatives of countries where both schemes are used. One of the features of the Conference was a series of study tours, which made it possible for small groups of technical authorities to see at first hand the fields of industrial development in which they were especially interested.

GENERATION OF ELECTRICITY

The total installed electrical generating capacity in the United States at the beginning of 1936 was 36,133,000 kw., more than it has ever been before. Of this capacity about 69 per cent was in steam driven generating units, 29 per cent was generated by water power, and two per cent by Diesel and other internal combustion engine driven generators. By the end of the year the installed capacity rose to approximately 36,900,000 kw. The ratio of water power to steam generators increased slightly because of the partial completion of some of the large Government hydroelectric projects. One of these was Boulder Dam where President Roosevelt officially put in service the first 65,000-kw. generator by pressing a key at a session of the World Power Conference in Washington early in September. Some of the generators are also operating at the Wilson and Norris dams of the Tennessee Valley Authority.

Most of the turbines installed in 1936 were for pressures of from 1,250 to 1,400 lbs., and throttle temperatures of 800 to 925 deg. Fahr. Many of these were "superposed" on existing equipment, that is arranged so that the exhaust steam from the new units could drive the older low pressure units. None of these turbo-generators was of more than 75,000

kw. capacity. There seems to be a tendency to build smaller stations closer to load centers instead of gigantic power houses feeding their loads over relatively long transmission lines.

The average generating station in the country today burns 1.47 lbs. of coal (at 11,000 B.t.u. per lb.) to make a kilowatt hour of electrical energy. The average of the stations installed in 1935 was in the neighborhood of 1 lb. of coal per kw.-hr. Fifteen years ago it took from two to three lbs. The boilers used in these stations are capable of delivering 1,000,000 lbs. of steam per hour at high pressures and temperatures. They are as tall as a six story building and burn as much coal in an hour as the average home owner burns in a whole winter. To save the cost of a building to house such immense equipment, some of the boilers and even the generators are being designed for outdoor installation. In Europe boilers known as the flash type of the same capacity as ours but much smaller in physical size are widely used.

The use of Diesel engines as prime movers for electric generators has doubled in this country since 1928, but they are still a very small proportion of the total. Diesel engines are very efficient, but are inherently small in size compared with steam or water turbines. They find the widest application in small isolated plants, and for special purposes, such as in locomotives. There is one large Diesel-driven central station in Vernon, Calif.

TRANSMISSION

In the last few years the improvements in generating equipment have been steadily lowering the cost of producing electrical energy. The costs of transmitting and distributing this energy have not decreased in proportion. This means that the economic length of transmission lines of present design is becoming shorter. The 270-mile 285-kv. Boulder Dam transmission line, finished in 1936, is believed by many to be the longest of its type that will ever be built.

Its cost with the terminal equipment at both ends was approximately \$95 per kilowatt, or only a little less than the cost of a modern generating plant of similar capacity. The recent technical advances in transmission would make lines of almost any length possible, but they would be so expensive that they probably will never be built. A radically new and less expensive design of transmission equipment will have to be found. Direct current transmission is one possibility. Conductors enclosed in pipes filled with oil or compressed air have been suggested. One 66,000-volt oil filled cable of new design was installed in 1936. Pressure inside the cable is maintained by automatic control from small reservoirs placed at frequent intervals in manholes.

A new development in artificial lightning generators which made it possible to test equipment with high current and voltage simultaneously has made possible further equipment for eliminating lightning hazards from transmission lines. High speed circuit breakers and fast and accurate relays, perfected in the last year, reduce the time of outages when lightning does strike. But all of this equipment adds to the cost of transmission.

One interesting development was the use of static capacitors in series with transmission lines to improve voltage regulation. A series capacitor may be designed to compensate for the inductive voltage drop of the line so that the voltage remains nearly constant even when a large load is suddenly thrown on the line. This avoids flickering of lights when large motors connected to the same circuit are started.

ELECTRICAL GENERATORS

Hydrogen cooling was a feature of many of the large turbo-generators being designed and built in 1936. This system of cooling, which is new for generators, has been used for some time for other rotating electrical machinery. The rotor of the generator runs in a sealed chamber which is filled with hydrogen gas. Provision is made for circulating and

cooling the gas. The advantages are fourfold. Friction and windage losses are greatly reduced. Hydrogen has a higher thermal conductivity than air, which makes it a better medium for carrying away heat produced in the windings. Maintenance is reduced because dirt and moisture cannot get into the machine. The life of the insulation is prolonged because there is no oxygen in contact with the windings. Corona discharge in the presence of oxygen and moisture is one of the biggest causes of insulation deterioration in high voltage generators. The stator windings and iron of some of the newest generators are cooled by water jackets.

The design of hydro-electric generators seems to be at a standstill for the present, at least there were no very remarkable developments in the past year. One manufacturer substituted micarta, a resin base plastic, for the customary lignum vitae in the underwater bearing of the turbine runner. Lignum vitae is a rare tropical wood, and the new material is reported to be both cheaper and better. The United States Engineers in charge of the Bonneville Dam project have conducted some very interesting model experiments on the effect of draught tube and runner design on the efficiency of water wheels. The models were transparent so that eddies and irregularities in the flow of water through the turbines could be observed and steps taken to eliminate them. Tests on redesigned models indicate that an increase of nearly one per cent in efficiency over the best present design can be expected in the full-sized machines.

For some years improved performance in electric welding generators has been gained by adding external reactors and control devices. Last year a radically new generator was put on the market which has inherent characteristics equal to those gained by the use of elaborate control devices with the conventional generator. The new welder has only one series field and the only control necessary is a single hand wheel which

changes the position of a magnetic shunt in the field circuit.

MOTORS AND CIRCUIT BREAKERS

Several very large installations of motors were made in steel mills during 1936. One of these required a total of 39,000 hp. and another 24,000 hp. in electric motors. The motors range from fractions of horsepower for signaling devices to 7,000 hp. for the main drives. Another large motorized unit is a stripping shovel that dwarfs the ordinary steam shovel. This monster has a bucket which can dig 30 cubic yards of dirt in one scoop and dump it at a height of 70 feet. It is powered by 1,000 hp. of electric motors.

Fractional horsepower motor designers have been concentrating their efforts on speed reducers of both constant and variable speed types, built as integral parts of the motor. Small electric motors, especially when running from alternating current, are essentially constant speed devices, and their speed is relatively high. Many ingenious mechanical means for obtaining reduced or variable speeds from these motors were introduced in the last year.

Oil circuit breakers for the 287-kv. Boulder Dam transmission line employed ten breaks in series under oil. Special precautions were taken to insure an equal division of the voltage across the switch among these ten breaks. Tests showed that the time required for circuit interruption was less than 1.5 cycles of 60 cycle current. The generous use of solid silver contacts in circuit breakers in place of the usual silver-plated copper was a development of the past year.

TRANSFORMERS

The outstanding transformer development in 1936 was the widespread use of organic substances other than oil as cooling agents in medium size transformers. These substances called by their manufacturers "Pyranol," "Inerteen," and the like, are non-inflammable and are better electric insulators and better conductors of heat than the familiar transil oil. This means that trans-

formers can be made smaller and do not have to be installed in special vaults because of fire hazard as they formerly did. Pyranol and Inerteen can be used to advantage in cables, capacitors, and other places where insulating oils are now used.

A notable installation of transformers was made at both ends of the Boulder Dam transmission line. Those at the dam end are rated 55,000 kva, 16.3 to 287 kv. They are the largest water cooled transformers ever built. At the Los Angeles end the transformers are air cooled and even bigger. They step down the 287 kv to 130 kv and are rated at 65,000 kva each but can carry 80,000 kva for two hours in an emergency. Each transformer occupies 12 by 23 feet of floor space, stands 36 feet high, and weighs nearly 200 tons.

Electric furnaces, especially those for annealing alloy steels, were installed in large numbers. One plant installed 26 such furnaces for annealing strip steel. The atmosphere within them can be accurately controlled, which makes it possible to anneal steel or other metals without the formation of scale.

DISTRIBUTION

Distribution transformers that are really miniature substations made their appearance during the last year. These transformers have overload relays and circuit breakers which automatically disconnect the load if it becomes too heavy. When these devices have operated a signal light is lit to tell inspectors which transformer is in trouble. A new type of wire applicable to single phase secondary circuits where one of the conductors is grounded has been developed. The wire consists of two concentric conductors insulated from each other. The inner conductor is solid, and the outer conductor consists of alternate strands of steel and copper. The wire is especially good for circuits which come in contact with branches of trees.

Manufacturers are building small unit type substations that are complete in themselves, and may be installed on pole tops or in manholes.

These substations operate automatically in case of short circuits and restore the service almost immediately if the short circuit is of momentary duration.

LOAD BUILDING

The use of new processes requiring electrical energy is one way of increasing the industrial load. An interesting new method of galvanizing iron wire by combining the processes of electrolytic refining and electroplating deposits pure metallic zinc directly from the ore. Electric heating pads interleaved with sheets of veneer and glue in a hydraulic press make possible the manufacture of plywood without the use of kiln drying. A method of making sandpaper in which the crystals of abrasive are made to stand on end by the influence of an electrostatic field while the glue is still soft turns out a better product.

A study of the distribution of automobile accidents during hours of daylight and darkness shows that in recent years the number of daylight accidents has been decreasing while the number happening at night has been increasing. More widespread use of adequate highway lighting should cut down the accident rate and incidentally create a large market for electricity.

The use of electricity in homes has been increasing largely because of further use of refrigerators, electric cooking devices, and hot water heaters. Air-conditioning has gained slowly, but steadily. One manufacturer of small unit air-conditioners has perfected a process for precipitation of dust particles from the air similar to the Cottrell method of smoke precipitation. The new system uses one pair of plates to charge the particles, and a third plate to precipitate them. The device was placed on the market early in 1937.

RURAL ELECTRIFICATION

On Nov. 14, 1936, the anniversary of its first allotment, the Rural Electrification Administration announced that the total sum allocated to farm electrification projects was over \$35,-

700,000. Work was definitely in progress in 20 States and actual contracts had been let for nearly \$5,300,000 for the construction of 6,109 miles of rural lines. Private companies were also very active in the extension of service to farmers, and it is variously estimated that from 250,000 to 300,000 new rural customers were added in 1936.

In order to make electrification of thinly settled districts pay for itself, new and less expensive distribution systems have been devised. This has been accomplished by simplification and standardization. One scheme has been to use a grounded neutral system on the high voltage side of the distribution transformers. This means that only one high voltage bushing is needed instead of the usual two, which cuts in half a large item of transformer cost. Equipment has been made as light in weight as possible so as to make installation easier and the strain on the poles less. The use of high strength conductors has made longer spans possible, thus saving poles. New and simplified fuses, switches, and other protective equipment are available.

ELECTRIC TRANSPORTATION

A recent report of the Federal Power Commission showed that 1.1 per cent of the total railroad mileage in this country is electrified. This electrified portion amounts to 10 per cent of the passenger mileage. The report said that 12,000 more track miles could feasibly be electrified. The cost would be in the neighborhood of \$600,000,000. This electrification would create an annual market for 5,000,000,000 kilowatt-hours of electricity. In spite of these possibilities there was no major electrification project in the United States under way in 1936.

There was, however, considerable activity in the production of large Diesel-electric locomotives. These engines now rival in power and tractive effort the largest steam locomotives. Quite a few of them are over 2,000 hp. and weigh nearly 200 tons. One 1,800-hp. Diesel-electric locomotive pulled a 6,300-ton freight train

in a demonstration. These locomotives have less standby costs when in service, and are available for use more of the time than steam locomotives.

One development in straight electric locomotives has been the use of oil-cooled instead of air-cooled transformers. This avoids damage to the windings by dirt picked up from the roadbed. An experimental steam-electric locomotive was built for one of the large railroads. It carries a condensing steam turbine which drives an electric generator. This generator in turn drives electric motors geared to the driving wheels. Since the turbine is condensing the same water is used over and over again, so that this locomotive does not have to pick up water at frequent intervals as do ordinary steam locomotives. Distilled water can be used, so that no scale is formed in the boiler, reducing maintenance. It also has the usual advantages of electric locomotives, such as ease of control and smooth starting.

Air conditioning of rolling stock continued to progress at a rapid rate. Developments in some of the special articulated trains were especially notable. One of these used so much power for auxiliary equipment that a 75-kva generator was necessary to supply it. A 220-volt, three-phase a-c system was used to distribute this power to the various cars.

Street railways concentrated on building more comfortable cars capable of maintaining faster schedules. Some cars were built which average 19 miles per hour including stops, which is 36 per cent faster than the present average. To do this these cars were designed for an acceleration of 4.75 miles per hour per second which is nearly double the common rate. Another development is the "all purpose vehicle," a combination trolley, trolley-bus, and gasoline-electric bus. This versatile vehicle can run on tracks and obtain power from a trolley wire for part of its run, leave the tracks but still get its power from wires for another part of its run, and in still another part it can get along without either tracks

or trolley, receiving its power from a gasoline engine driven generator.

METERS AND INSTRUMENTS

The most interesting electrical instrument developed in 1936 was an oscillograph which can make a photographic record of an event after the event has taken place. Power system engineers like to have complete records of the effects of lightning disturbances on their systems. In order to make it unnecessary to have recording devices running continuously to catch any trouble that may occur, it is convenient to have the disturbance itself start the recording device. The disadvantage of this has been that the very start of the disturbance, which may be the most important part, was not recorded. The new device, which is called a pre-recording oscillograph, accomplishes this seemingly impossible feat. The system voltage or some quantity that it is important to record is continuously indicated by a cathode ray oscillograph with a zinc sulphide fluorescent screen. This screen possesses the ability to retain the image of voltage indication for a short length of time. Thus when a disturbance occurs a camera shutter is opened and a picture taken of the retained image, which is really a picture of something which happened before the shutter opened.

Another interesting instrument makes use of the property of certain crystals to move mechanically when subjected to a difference of electric potential. This property is called the Piezo-electric effect. If a small mirror is attached to such a crystal, a beam of light reflected from the mirror will move in proportion to the voltage applied to the crystal. The position of the beam can be recorded photographically on a moving film as in the ordinary oscillograph. A relay has also been developed which uses the mechanical movement of a crystal to open and close electrical contacts.

In the last few years rotating electrical machinery has been designed to run at higher speeds than ever before. This means that the prob-

lem of balancing the rotating parts has become more difficult. A new device has recently been perfected which makes a record of the vibrations of an unbalanced rotor from which it is easy to calculate how much weight should be added and at what points it should be added in order to obtain a perfect balance. The machine is so versatile that it can be used for all sizes of rotors from the 20-ounce ones in electric refrigerator motors to the 200-ton rotors of turbine generators.

Many other electrical instruments for measuring non-electrical quantities have been developed in the last year. One measures the thickness of paint on metal surfaces. Another measures the pressure on the rolls in a steel mill, which may amount to many tons to the square inch. Similar devices measure the strain in steel members of a bridge or the tension in a strip of steel as it passes through the mill. An electrical Davy lamp has been developed which not only detects the presence of very small amounts of explosive gases, but also gives a measure of the quantity of gas present.

The study of "creep" or plastic flow in steel and other metals requires the measurement of very minute changes in length. An electric micrometer has been built which is able to measure accurately changes as small as one millionth of an inch.

Developments in meters for measuring electrical energy where two different rates are paid have been notable. A single meter is now available which can measure and totalize separately energy used for lighting and water heating, where such services are billed at different rates. Many meters are now being built for outdoor installation, which will avoid the necessity of return calls by the meter reader in case no one is home on his first call.

The study of the force exerted by one sphere on another when a large difference of potential exists between them has showed that the force is a very good measure of the difference of potential, or voltage. On this account a 50-cm sphere gap with

means of measuring the force between the spheres has been proposed as a standard for measuring high voltages. The present measure of high voltages is in terms of the distance between such spheres at which a spark discharge first occurs. From many standpoints the force exerted when the separation is large enough to prevent sparking seems more satisfactory.

CONTROL DEVICES

In 1936 as in the past few years many control devices have been introduced which use electron tubes. They are finding application even in such rugged pieces of apparatus as the flying shear in a steel mill. This machine cuts a strip of steel coming from the mill in pieces of uniform length. When the steel is coming out at the rate of hundreds of feet per minute, a small error in the timing of the shear may make considerable difference in the length of the pieces. This error has been reduced to a minimum by the use of an electronic timer. Another delicate industrial operation that has been regulated by vacuum tubes is the speed of a paper-making machine.

The use of hot water heaters which take power at off-peak times makes it necessary to have some way of turning the heaters off at times of heavy load, either by a timing device or from the central station. The latter has been accomplished by sending a carrier current impulse over the power wires. Relays installed at each heater turn it off and on in response to impulses from the central station. Thermostatic control at the heater also turns it off when the water is hot enough. Carrier current is also used to turn street lights off and on from a central point.

An alternating current voltage regulator which has no moving parts has been developed. It makes use of familiar copper oxide rectifying units.

Relays are now designed that are really superhuman in their ability to analyze troubles that may arise in power systems, and take the proper steps to remedy them. One relay

developed in 1935 for the protection of trolley circuits of electrified railroads is in this class. It works on the rate of rise of current so that if the current is increasing too fast it may disconnect part of the current before the current has had a chance to become greater than normal. The relay knows by the rate at which the current is rising when it is going to be too high. It can also distinguish direction of power flow and give an estimate of how far away the trouble is. It can tell the difference between high current due to a short circuit and that due to inrush current of the locomotive transformers, which, though it may be high, is a normal condition. A high speed distance relay trips almost instantaneously if a fault is less than a certain distance from the relay, and trips in a time proportional to the distance when the fault is farther away. Detection of ground faults on normally ungrounded systems has been expedited by the use of a relay employing a vacuum tube. Another interesting relay is one which detects an out-of-step condition in a synchronous machine, one which in some cases is very hard to tell from a short-circuited condition. The protection of small motors from overload is very difficult because the current taken at no load and full load is so nearly the same. A small thermal relay which can be attached directly to the motor frame and set to disconnect the motor when it becomes too hot, avoids the difficulties met in the older current operated devices.

ELECTRON TUBES

One of the disadvantages of the hot cathode mercury vapor tube known as the "Thyratron" or "Grid-glow" tube has been the danger of destroying the cathode by applying a voltage to the plate before the cathode is sufficiently hot. It was necessary to wait sometimes as much as five minutes after the filament was lit before it was safe to use the tube. A new type of cathode has been developed which is self-protecting. The tube remains inopera-

tive during the warming up period, but no harm can come to it.

A cold cathode arc-discharge tube has been built with grid control, so that it can be used for some of the purposes of the hot-cathode tube. These tubes need no time for warming up and no power to heat the cathode. One interesting application of the tube is as a timer for a gasoline engine.

During the past year much work has been done on cathode ray tubes, especially those for use in television work. Tubes are now built with a screen as large as 15 inches in diameter. The image formed on the screen can be made black and white instead of the earlier green or pink and white.

ELECTRICAL COMMUNICATION

The most interesting research in the communications field which has been reported in the past year is that of G. C. Southworth of the Bell Telephone Laboratories on the propagation of electromagnetic waves over dielectric rods. These waves travel by means of a path which is not a conductor to ordinary electric current. This path may be a hollow copper pipe in which case the wave really travels through the air filling the pipe. However, the pipe is not necessary as the waves will travel equally well along an insulating rod. There does not need to be any return path. The waves are generated by a high frequency oscillator like ordinary radio waves. The frequency must be very high, so that the wave length is something like 9 to 15 cm. They are not the same as radio waves, but differ from them in certain important respects. The velocity of propagation is different, and the rate of attenuation with distance from the source is not the same. Four different kinds of waves of the same general type have been shown to exist by the mathematical theory, and all four have been actually produced experimentally. For one kind of wave the attenuation decreases as the frequency increases, which is just the opposite of the ordinary phenomena. If the end of

the pipe which carries the waves be flared out like a horn, energy will be radiated in the form of ordinary radio waves, with a marked directional effect like sound from a megaphone. While these waves have no practical application as yet, they may be the basis of some entirely new developments.

The increased use of teletype service has made necessary the construction of several new and much larger teletype exchanges in the past year. The design must be quite different from ordinary telephone exchanges, since room must be made for a typewriter keyboard at each operator's place.

Another communication service which has been much improved in 1936 is wirephoto, or the transmission of pictures over telephone wires. It has been found necessary to build transmission circuits with wider frequency bands and less interference in order to transmit clear pictures. With the improved facilities, photographs reproduced thousands of miles away can scarcely be distinguished from the originals. A type of communication closely allied to wirephoto is called facsimile. It is the transmission of printed or written matter. One interesting application of this service is in the dispatching of orders to air liners. Small facsimile receivers are being built which will actually reproduce the orders on board the airplanes. This will make it unnecessary for the pilot to listen to the message while it is coming in, or to rely upon his memory as to orders dispatched while he is in the air.

In the field of ordinary telephone communication there have been several interesting developments. One is the use of inert gas under moderate pressure in large telephone cables. This serves two purposes, first, it gives indication of any leaks in cable sheath and, secondly, if any small leaks occur it prevents moisture from entering and damaging the cables. The system proved its worth during the floods in western Pennsylvania last spring, when several trunk cables sprung leaks while completely submerged. Gas pressure was main-

tained at both ends and the cables remained in service until the floods subsided.

In order to make extension of rural telephone lines less expensive a new type of telephone cable and a new technique for laying it have been developed. The cable is rubber covered. The rubber has been especially developed in order to stand prolonged exposure to moisture and the chemicals usually found near the surface of the ground. It is designed to be buried by a special plow. The plow has a narrow share with a hollow tube down the back through which the wire passes from a reel carried on the plow. As the plow is pulled by a tractor the wire is buried without the necessity of any preliminary trench or backfilling. The plow can lay the cable at a depth of from 15 to 18 inches. Loading coils in moisture proof cases have been designed to be buried with this new cable. (For the discussion of radio, see pp. 526-30).

ILLUMINATION

W. C. Brown, chairman of the Committee on Progress, said in a report published in the November, 1936 *Transactions of the Illuminating Engineering Society*: "... During this phase of development attention has been focused largely upon *quantity* of light as an aid to seeing. There is now evidence that the profession, and the industry as well, are considering lighting problems from the standpoint of quality of lighting." This emphasis on quality is typified by the design of new lamps giving light of high intensity and in particular ranges of the spectrum. New luminaires have been designed for combining the light of these various lamps to obtain a resultant illumination of the quality that experiment has shown to be best.

Mercury vapor lamps of the kind known as type H have been further perfected in the last year. The actual light source in these lamps is a stream of incandescent mercury vapor under high pressure in a sealed quartz tube. The whole is then protected by enclosing it in a glass bulb

of the conventional type. These lamps require certain special auxiliary equipment, so cannot be used in an ordinary lighting circuit. They are, however, the most efficient light source yet developed. The efficiency can be still further improved by circulating water in the space between the quartz tube and the outer glass bulb. This last scheme is still in the experimental stage. Bulbs without water cooling are now available in 400, 250, and 85 watt sizes.

A new colored incandescent lamp which gets its color from a fluorescent coating on the inside of the bulb, is much more efficient than the older type which used colored glass, which prevented the radiation of all light except that of one color. The new lamp generates light of the desired color only. The efficiency of ordinary incandescent lamps decreases considerably with age because of blackening of the inside of the bulb. This trouble has been remedied in a new lamp which has a metal screen within the bulb. The screen is so designed that most of the dark material is deposited on the screen, leaving the bulb as clear as ever. Methods of putting reflecting coatings in various positions on the inside of incandescent light bulbs have been improved in the past year. These reflectors are a great help in the design of indirect lighting units.

One interesting lamp for the production of ultra-violet radiation was perfected in 1936. It is called the sterilamp and produces ultraviolet light which is strongly germicidal. It has been found very effective in the prevention of mould on the surface of meats when used in cold storage rooms.

Spectacular display lighting of a more intense and effective kind than has ever been used before was developed in the past year. The lighting was one of the features of the Texas Centennial Exposition in Dallas, and of the Great Lakes Exposition in Cleveland. Some disputed questions about the lighting of school rooms will be settled by some carefully controlled experiments that

have been started in the Lafayette School in Joplin, Mo. These experiments will be carried on for the next few years and the results should be very interesting.

The use of polarized light for eliminating glare of automobile headlights has great possibilities. A type of headlight glass has been developed which allows light polarized in only one plane to pass. If windshield glass which passes only light polarized in the opposite plane is used then a driver can not see the light from approaching headlights at all. He can, however, see the approaching car by the reflected light of his own headlights. For this system to be effective, laws would have to be passed requiring polarizing filters on all headlights.

ELECTRICITY IN MEDICINE

The results of a combined research project carried on over a number of years by the Columbia University Medical School and the Bell Telephone Laboratories on the effect of electric shock on the heart were published in 1936. The experiments were performed on a number of animals, the largest of which were sheep, and the results can be applied to man with reasonable exactitude. The general conclusion was reached that a 60-cycle current through the heart of more than one-tenth of an ampere and more than three seconds duration is apt to be fatal to man. If the frequency is less the fatal current is slightly higher. Shocks of shorter duration are less serious.

The experiments were very carefully controlled and studies were made of the effect of the path of the current, the frequency of the current, the phase of the shock occurrence in the heartbeat cycle, and the duration of the shock. It is found that death from electric shock is due to what is called ventricular fibrilla-

tion of the heart. This means that the heart quivers instead of beating rhythmically. The blood no longer circulates and death follows. An interesting fact that was brought out was that while there is a threshold current which is fatal, a much larger current may not be fatal. It is even possible to stop ventricular fibrillation by a high intensity counter shock of short duration given within a few minutes of the first shock. Several sheep thus treated recovered and lived normally thereafter.

A sensitive micro-voltmeter has been developed for measuring and recording minute voltages generated in various tissues of the body. The use of this device to detect "brain waves" has been especially interesting. If electrodes attached to the micro-voltmeter are placed on the sides of the head and the subject sits relaxed in a darkened room, a definite periodic voltage is recorded. When a light is switched on or the subject's attention is attracted in some other way the pattern is changed decidedly, showing the influence of brain activity. The voltage waves of persons afflicted with mental diseases have been found to differ in certain characteristic ways from those of normal persons. Further study along these lines promises to be of great interest and importance.

The Van de Graaf high voltage electrostatic generator has been put to work in connection with large x-ray tubes for the treatment of cancer. An ingenious arrangement of the apparatus makes it possible to treat patients in perfect safety in spite of differences of potential of over 1,000,000 volts. The rays generated are similar to the gamma rays of radium, but the machine will be capable of producing rays of a higher intensity than the combined output of all the radium in the world.

AUTOMOTIVE ENGINEERING

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GENERAL

While numerous unorthodox constructions and designs are being worked out in the laboratory and secretly on the road, the present new car models show no radical changes over their predecessors. There has been a considerable refinement in details of both chassis and bodies. Many features are provided to make the new cars safer, and at the same time the sheet metal and body designs enhance the appearance. A number of manufacturers have increased the wheelbase and, in spite of greater power due to slightly larger engines, the weights have nevertheless been held down and sometimes reduced, resulting in better performance. By taking advantage of a faster rear axle ratio, together with improved carburetion methods, fuel economy has been increased.

ENGINES

Power output has been augmented by increasing compression ratios and often through increased piston displacement. One maker has reduced the engine stroke and decreased the piston displacement from 241.5 cu. in. to 228 and at the same time maintained the power output of the previous engine. A notable event in the direction of economy is the introduction of a 136 cu. in. V-8 engine with economy in mind. This engine interchanges with the larger one of 221 cu. in. and the remainder of the car is unchanged as between the producer's two models. The smaller engine develops 60 H.P. and the car has a top speed of 70 MPH. There is no doubt that the introduction of this model will have a profound bearing on the introduction of further economy type cars.

One six cylinder engine is provided with dual carburetion, one mixing chamber feeding the first two cylinders and the other, the remaining three. Several manufacturers

building both six and eight cylinder engines have standardized on many of the parts in order that they be interchangeable in the two engines, simplifying manufacture and service. Such parts include the timing chain, sprockets, the entire valve gear, connecting rod, water pump, fuel pump, clutch housing, oil pump drive, generator and spark plugs.

CYLINDER AND HEAD

The problem of cylinder bore and valve seat distortion due to thermal conditions as well as the stress from the cylinder head bolts has been carefully studied and the new engines show a better distribution of metal to counteract this influence such as ribbing around the upper portion of the cylinder walls, relocation and alteration of the shape of the water holes in the top deck and ribbing between the hold-down bosses and the barrel. A new copper-alloy head is now in production and excels aluminum in temperature equalization and has resulted in economy and greater power output. A new composite cylinder head provides a cast combustion chamber and top face wall in which is cast a pressed steel flange to which is welded the water jacket cover in the form of a stamping.

VALVE GEAR

There is an increased use of the self-adjusting hydraulic tappet and the latest refinements consist of the addition of an oil filter to prevent dirt entering the mechanism and to trap any possible air in the oil pressure feed line. A "jiggle-pin" is used by one maker to provide a small bleed aperture which will not clog. A self-adjusting tappet screw eliminates the use of the usual locking nut and provides greater adjustment accuracy. A threaded idler is keyed to and held by washer-type springs on an extension of the tappet screw

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body, with the idler thread mismatched when in a free position.

Cast iron comshafts are in greater use and light weight tappets are provided in order to reduce the valve spring load. A streamlined inlet valve permits a greater flow of mixture into the cylinder. An overhead valve engine which last year provided a cooling water tube through the rocker shaft has retained practically the same time and lash characteristics of the valve gear through the expansion and contraction of a die-cast aluminum rocker-arm shaft bracket.

PISTON AND RINGS

The slipper type of piston which was introduced last year is now on the increase in view of its lighter weight. A new type of aluminum alloy piston, the "autothermic," controls the cylinder expansion under heat to any desired predetermined extent by the use of bi-metallic struts which consist of cast-in struts of ordinary steel alongside of which is the piston material itself. The amount of steel and aluminum determines the expansion characteristics. The steel-copper alloy piston is used to a greater extent and is cast with a very thin section to hold down its weight.

A new type of oil and compression ring utilizes an expander comprising a series of independent double-leaf spring units equally spaced on a carrier band, the latter having a gap located opposite the ring gap. Oil consumption has been considerably decreased by its use. To provide a quick seating of the ring in a new engine, the rings have a slight taper amounting to .0005" on the peripheral face. The ring acts as an oil scraper until worn in, at which time oil consumption is ordinarily high.

CONNECTING ROD

In many engines the weight of the connecting rod has been decreased and this has been particularly valuable in the case of the steel-copper alloy piston where the total weight of the assembly is no greater than that of the previous rod and alumi-

num piston. Cadmium silver bearings for the connecting rod big end have been adopted by some more manufacturers while others are using a non-crystallizing babbitt.

CRANKSHAFT, LUBRICATION AND COOLING

Crankshafts are more completely balanced by the use of integral counterweights, and one popular make of six cylinder engines now provides a four bearing crankshaft in place of the previous three. To avoid roughness, several manufacturers have increased the thickness of the flywheel flange as well as the flywheel section where they are bolted together. A new hardening process for crankshafts consists of heating the bearing surfaces by electrical induction and subsequently quench-spraying the surface from a water jacket built in the inductor plugs surrounding the shaft.

A metered flow of oil is obtained in one engine by feeding oil to a circumferential groove in the bottom of the piston skirt which registers with a port supplying oil when the piston is near the bottom of its down stroke. Communication from the lubricating system is established with the port from a supply duct by machining a relief in the valve tappet so that oil is by-passed when it is in its uppermost position.

There is a still greater use of packless pumps either by the use of graphite washers or a chevron type of seal. Synthetic rubber is used to a large extent for the same purpose and often in combination with these methods. Various means of silencing the cooling fan consist of special angular spacing of the blades or the use of alternate short and long blades with oval-shaped ends.

FUEL SYSTEM

The concentric carburetor float which was popular many years ago has been rejuvenated in the form of a double float connected to a single needle valve control lever. In one carburetor baffles are provided between the mixing chamber barrels to maintain the proper height of fuel

in each nozzle at all times. Most carburetors provide for the venting of any bubbles that might be entrapped in the fuel on its way to the main jet to avoid vapor lock.

The use of the automatic choke has increased and a fuel-volatility selector is provided in most cases. Manifolds have been reshaped to provide better vaporization and in some instances the hot spot has been made smaller to decrease the residual heat. The oil bath type of air cleaner is very popular, the recent dust storms in the West having had a decided influence in this respect. Fuel pumps have been relocated to remove the bowl from proximity with the exhaust manifold and to place it so that it will protrude beneath the engine pan where it is exposed to the outside air-stream.

ELECTRIC EQUIPMENT

Voltage regulation of generators has received a decided impetus and battery capacities have been increased. This is also true of the generator output in order to care for the many electrical accessories that are now found as standard or optional equipment. A new battery construction encases the positive plate in flexible and highly porous retaining mats composed of numerous layers of finely spun glass. Several makers have now placed the battery in an underhood location for easy servicing. A 10 mm. spark plug has been introduced by one maker on his four series of engines and, due to its small heat retaining capacity, provides better performance.

CLUTCH AND TRANSMISSION

The difficulty of clutch engagement accompanied by chatter has resulted from greater flexibility in motor mountings, livelier suspensions and the use of lowpressure tires. This has been solved by providing greater cushioning of the clutch driven-disc. Clutches are balanced by the use of clips of different thicknesses instead of grinding away material to preserve a limit of 3-in. oz. and are placed on the driven-disc in the correct angular position after the balancing error and location have been de-

termined in a balancing machine. The spring plates used in some clutches are made slightly stiffer at the outside in order to increase the capacity and to obtain a better wear pattern on the friction linings. An endless woven lining has been produced having a high bursting strength and is of uniform rigidity throughout due to the absence of the joint which also minimizes the balance error.

One manufacturer who has used the "electric finger" type of gear shifting control has added an automatic vacuum clutch control of the same type that was popular a few years ago. It will be recalled that pre-selection of a speed could be made and the shift accomplished when the clutch pedal was thrown out. By providing the automatic clutch control which functions when the foot is taken off the accelerator there is now no need of depressing the clutch pedal for this function. A small centrifugal governor on the back of the transmission, driven by the speedometer gears, permits the automatic mechanism to be operative at speeds below 17 MPH. Above that speed, the system is inoperative.

The overdrive is used to a greater extent and a new type consists of an "automatic selective control" in which the unit can be cut in or out at any speed above 35 MPH. The operation is obtained by taking the foot off the accelerator pedal and either pressing down quickly to disengage the overdrive or to press gradually to re-engage it.

PROPELLER SHAFTS

A new type of universal joint incorporates a large diameter yoke member of a diameter slightly less than that of the propeller shaft tubing and bored out for lightness. An internally splined sleeve is pressed into, and welded in, the tube and mates with an external spline on the yoke of the sliding yoke. The spline diameter is increased over previous practice so that the lower unit pressures permit a lower hardness of the parts, enabling the machining to be done after heat treatment. Weight is saved and the over-

hang from the joint center is lessened. To lower the floor without resorting to hypoid gearing in the rear axle, one maker uses a two-piece three-joint propeller shaft. When the axle is in its uppermost position, the rear portion of the rear shaft requires a very small bulge at the back end of the rear compartment floor. Another construction provides a single two-joint shaft between an extension on the transmission and the rear axle. A shaft within the extension has a slip-joint at its forward end consisting of an internal-external gear tooth coupling which takes the place of the ordinary splined joint. The shaft is supported at the rear of the extension in a special bronze bushing protected by a felt seal.

REAR AXLE AND BRAKES

Hypoid gearing has been adopted by a considerable number of manufacturers, the lower pinion shaft enabling the body floor to be dropped from one and one half to three inches. Since the range of cars covers the low priced as well as the high, it is evident that cost has placed no restriction on the adoption of this type of gearing. Axle shaft splines where they fit into the differential gears have been changed in numerous instances from straight side to involute form. Ring gears have been increased in section to minimize distortion in hardening. Wheel bearings are protected from dirt that might enter the brake enclosure. One manufacturer provides no curvature in the normal plane of the ring gear tooth but makes it of rack shape. Conjugate tooth action is secured by increasing the curvature of the pinion tooth. The flanged end of the axle shaft to which the wheel is affixed is used in a greater number of axles.

Various methods are used to protect the brakes from the entry of dirt and water by the means of seals and increase the life of the linings. The hand brake lever at the left side under the dash is used to a greater extent and its brake-rigging has been simplified in many instances by eliminating the customary cross shaft. A triangular plate is substituted and

its front corner is attached the hand lever cable. From the other two corners run the cables to the rear brakes.

SUSPENSION AND FRAME

More power plants have been moved forward to secure better weight distribution and to increase the body room. The rear seat is also located ahead of the rear axle, providing better riding qualities. More cars are equipped with stabilizers, some having one on each end of the vehicle. Several cars align the frame with the rear axle in a crosswise direction by means of a link extending from a ball-jointed connection on the frame at one side and secured on the opposite end to the spring pad by a similar joint.

Greater frame rigidity has been obtained by the use of I-beam x-members, the increase amounting to as much as 400%. This results not only in a better foundation for the body but increases the road stability of the car. The steering and suspension systems are better able to function with the more rigid set-up.

CONTROL

A twin lever steering gear has been introduced in which there are two pins on the inside arm of the steering shaft lever which normally engage a spiral cam at the base of the steering column. The use of two pins reduces wear. In the extreme positions only one pin engages and the variable ratio provided relieves the effort for parking and furnishes better controlability on high speeds. Straddle mountings of the steering arm shaft for greater rigidity is in considerable evidence. Adjustments are more complete and accessible. Instead of running the horn wire through the steering gear base, a new construction provides a hole in the steering tube through which the wire is brought to an insulated metal sleeve. Current is conveyed to a plate spring acting as a brush and secured to the outside column tube. In most cases a greater reduction is incorporated in the steering gear in order to reduce the necessary effort.

EQUIPMENT

In "cleaning up" the exterior of the car, horns have been placed either under the hood or in the space between the radiator core and the grille. One maker has developed an electrical stoboscopic calibration device so that horns when used in pairs may be selected to match within one and one-half cycles of pitch.

The long bullet-shaped head lamps are popular and in a number of instances they are faired into the hood side. There is a considerable increase in the use of a central license plate support at the rear center of the body with a tail light at each side on the fenders or mounted high on the body at the termination of the body belt-moulding. With the greater use of voltage control generators there is a trend toward the use of an indicator lamp to replace the conventional ammeter. The edge lighting of the instruments is almost universal. As a safety precaution, one manufacturer recesses all controls to make them flush with the instrument panel so that no injury can result should a passenger be thrust forward. Several makers locate the radio in the center of the instrument panel. The push-pull type light switch is used to a greater extent. A hot air windshield defroster is featured on most cars. A small centrifugal blower forces a portion of the warm air from the hot water heater through a tube to each side where it is directed against the bottom of the windshield glass. The running board is sometimes used as an aerial for the radio by insulating the brackets from the chassis frame.

GRILLES AND SHEET METAL

Horizontal radiator grilles of convex form predominate and in some instances the front grille is carried back at the upper portion to form the hood louvres. Where this is not done, the louvre design invariably corresponds with that of the grille. While most grilles have a forward sloping design, a new note is struck in one make where a rounded formation is used. The one-piece hood top hinged at the rear and introduced last year is now used on several cars.

One manufacturer provides a one-piece hood with a decidedly rounded front in which louvres are stamped and which replaces the customary separate grille. Hood sides are in many instances held fixedly in place but readily removable when service work is necessary. Fenders are deeper and wider and the wheel opening reduced in size. One manufacturer provides a raised panel on the front fender apron which continues back through the cowl side and fades off near the rear of the front door to give a speed effect.

BODY

The all-steel body is used by a greater number of manufacturers. Bodies are considerably wider, giving more seating room and a wider windshield. The lowered rear floor and higher windshield openings provide better vision. Windshields have a greater slope and the rear panels have a more sweeping flow. The tail end of these bodies provide greater luggage space and most cars are now capable of readily taking a steamer trunk. Door openings are higher and wider. The lower floors decrease the step height from the running board. The drip-moulding which was eliminated several years ago in order to obtain a smoother exterior, has been reinstated. Sound-proofing and heat insulation continues with the various methods used in the past. Noteworthy sound absorption development has been applied to a large inter-city bus in which a light weight mineral wool blanket is affixed to the metal roof. A perforated board is located with an air space between itself and the wool and $\frac{1}{8}$ " holes are drilled in it on approximately $\frac{1}{8}$ " centers. Sound waves that get into the bus pass through the perforated board and are absorbed in the wool. One manufacturer mounts his bodies on short frame outriggers within which is located a pure gum-rubber spool. The rubber insulation is complete in that the body bolt retains the body only through the intermediary of the rubber. There are 14 such mounting points.

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Door handles on all makes are of the safety type with both ends curved inward. A new cigar lighter automatically cuts off the current when it has been heated to the right degree. Most of the adjustable front seats have a four-inch range of movement and as they are moved forward the back of the seat is lifted three-quarters of an inch by means of an inclined roller track, raising the operator and, by tilting the back of the seat forward, a short person obtains a better point of vision as well as having his feet brought into better re-

lationship with the controls. As a safety measure, one manufacturer provides a padded rolled edge around the back of the front seat top to protect a rear seat passenger who might be thrust forward. Sponge rubber is also incorporated in the padding. A silk robe cord is used in place of a metal tube. Such evidences of safety are noteworthy and coupled with other features such as better vision, lessened fatigue of the operator, increased acceleration and braking make the new cars a distinct advance over the previous models.

NAVAL ARCHITECTURE AND MARINE ENGINEERING

BY H. H. BROWN

EDITOR, *Marine Engineering and Shipping Review*

SHIPBUILDING REQUIREMENTS

Nearly 88 per cent of the seagoing tonnage of the United States, or about 6,500,000 gross tons of shipping, is now 14 years old or more, and shipping of 1,000,000 gross tons is already 20 years of age or more. This includes passenger and cargo vessels in the foreign and domestic trades and the tanker fleets.

This situation indicates the immediate necessity for replacing most of the vessels in the American merchant marine with modern ships which are better adapted to the future needs of commerce and which are more economical to operate. Old ships, such as now comprise the bulk of seagoing fleets, cost more to operate and maintain; they burn more fuel, are generally deficient in speed and capacity, and, with age, the maintenance costs steadily mount up. In the case of passenger vessels, they lack the modern facilities that travelers have become accustomed to on shore and which are offered on a lavish scale in modern ships. To compete with foreign tonnage for overseas traffic, therefore, it is essential that modern economical ships be built from time to time to replace the older and less efficient transportation units of the American merchant marine.

This fact was recognized when the

last Congress passed the Merchant Marine Act of 1936, which provides the means for making a start at least towards the modernization of our merchant fleets. According to government estimates, this will require an annual replacement program amounting to over 400,000 tons in the foreign trade fleet, 300,000 tons in the domestic fleet and 350,000 tons in the tanker fleet, or a total of over 1,000,000 gross tons each year during the next six years, in order to replace by 1942 the 6,500,000 tons of merchant vessels that will then be 20 years old or more.

This is a large shipbuilding program. It represents four times the average annual output of merchant ships in this country and includes all types of vessels from the humble freighter and tanker to the largest passenger liner. A substantial start has already been made in this direction in the tanker fleet, which is not dependent upon government aid for either its construction or operation. To replace old and worn-out vessels, no less than 29 large seagoing tankers, aggregating 229,406 gross tons, were ordered or completed in 1936, and there is every indication that further orders for vessels of this type will be placed during the coming year.

The major problem, however, is the replacement of several million tons of

cargo and passenger vessels that have practically outlived their usefulness and that can no longer compete successfully with modern foreign-flag ships. As the shipowners are dependent upon government financial aid to carry out this major shipbuilding program, the recently appointed Maritime Commission, which according to the provisions of the Merchant Marine Act of 1936 will have charge of this matter, is already studying ways and means of solving this problem, and it is expected that a definite replacement shipbuilding program will be started in 1937.

As evidence of the beginning of this program bids were received in January, 1937 for the construction of three 17-knot cargo ships, each 292 feet long, and plans and specifications were issued for the construction of a modified sister ship of the transatlantic liners *Manhattan* and *Washington* by the United States Lines, and for three 16½-knot combination cargo and passenger vessels by the Panama Railroad Steamship Company. At the first of the year a contract was pending for the construction of two 500-foot cargo ships for the Matson Navigation Company, and plans were being prepared for the construction of four cargo ships for the Grace Line, six 18-knot cargo liners for the Black Diamond Line, two combination cargo and passenger vessels for the Savannah Line, four large freighters for the Isthmian Line, three passenger and cargo vessels for the Export Line, two passenger and cargo vessels for the Mississippi Shipping Company, a 600-foot bulk freighter for the Pittsburgh Steamship Company, a passenger and cargo liner for the Gulf Pacific Mail Line, six 18-knot freighters for the Calmar Line, and a combination passenger and cargo liner for the American South African Line.

MODERN SHIPS

Speed and Capacity.—In view of the impending shipbuilding revival, which the needs for modern tonnage indicate, it is of interest to consider some of the more important questions affecting the design and construction of modern ships. In general, the trend

in ocean liners and cargo ships is toward higher speeds and greater capacities. The 8- or 10-knot tramp has been shoved aside by the 12- to 18-knot cargo liner operating on a fixed schedule. This change has been influenced largely by the demand for quicker dispatch and regular service to meet the needs of modern business methods based on reduced inventories and immediate deliveries. Modern passenger vessels are powered for speeds of 20 knots or better and the way is now open for stepping up the speed of medium-sized combination passenger and cargo vessels from 20 to 25 knots without increasing the displacement or reducing the carrying capacity. These advances have been made possible by improvements in ship forms through model tank research, reductions in hull weights through welded construction and the use of high strength steel, aluminum and other alloys, and reductions in machinery and fuel weights through the use of high steam pressures and temperatures and the adoption of Diesel engines with their reduced fuel consumption.

Shipbuilding Costs.—While engineering progress has made available more power and greater speed in ships without appreciable increase in weight or reduction in paying cargo, the cost of shipbuilding has shown no signs of diminishing. On the contrary, prices have risen to a very considerable extent and cargo, tanker and passenger tonnage now costs at least 25 per cent more than it did a year ago, and the rise in production costs has not yet reached its limit.

Propulsion.—After securing the most efficient hull form for a modern ship with the aid of model tests, and thus reducing the power required for propulsion to the minimum, propelling machinery of the highest practicable thermal efficiency should be used. In a steamship this means the use of high pressure and temperature steam. This is one of the outstanding developments in marine propulsion and by its use fuel economies on the order of 0.6 pound per shaft horsepower per hour for all purposes are now being secured in regular operation. These records,

however, merely mark the beginning of a very definite trend toward the use of steam at higher pressures and temperatures and a realization of greater economies. New ships now being planned will have a fuel consumption of 0.55 pound per shaft horsepower per hour with a thermal efficiency of about 23 per cent. By increasing the steam pressure to 1,200 pounds per square inch and the temperature to 950 degrees F, a fuel rate of 0.47 pound per shaft horsepower per hour is possible with a thermal efficiency of over 28 per cent. This represents a reduction of 19 per cent in fuel consumption and 16 per cent in weight as compared with present practice. All this can be obtained, it is estimated, with no increase in cost and ultimately with an appreciable reduction in cost.

Safety.—In addition to being a far more economical unit of transportation on account of the tremendous advances in hull and machinery design now available, the modern ship will also be the safest ship afloat. Not only must new ships meet the subdivision and safety requirements of the International Convention for the Safety of Life at Sea of 1929, which was ratified by the United States last year, but investigations of the stability of ships in damaged condition, which are now being made in this country for the purpose of recommending future legislation for safety at sea, will introduce stability requirements to insure that a vessel will remain afloat after sustaining serious damage in collision. As protection against fire the modern ship will be of fireproof construction throughout. This does not mean that combustible materials will be entirely eliminated, but that the type of construction will be such that the spread of fire will be restricted so that an incipient blaze can be extinguished before it becomes menacing and, therefore, the disastrous conflagrations which have occasionally, but rarely, occurred in the past will be impossible.

MODEL BASIN RESEARCH

Hull Resistance.—To model basin research the shipowner is indebted for most of the progress in reducing the

resistance of ships and, therefore, in developing the modern economical ship. With the advent of smaller towing tanks, and hence less time and lower costs for testing models, further advances may be looked for in this direction for future ships. All of the improvements in hull resistance which have been made in recent years are the results of efforts to improve the streamline flow around the hull either by reducing the bow wave or by regulating the water flow into the propeller and of efforts to reduce appendage resistance. As a result of the efforts to regulate the water flow at the stern, it has been found that U-shaped sections in the after-body give a more uniform wake and better hull efficiency than V-shaped sections; that with full afterbody lines a single screw should be sufficiently far from the stern post to be clear of large eddies; and that propeller bossings of twin-screw vessels should be designed to reduce the wake variation in the propeller disk to the least amount possible. Reductions in power of from 10 to 18 per cent for the same speed have resulted from this work.

Hydrodynamics.—In the field of hydrodynamics, the model basin has made many contributions, chiefly clarification of the laws of frictional resistance and coordination and extension of experimental data on frictional resistance. It has been found that the roughness resistance of the shell plating of a ship can be reduced by lapping the plates with the projections pointing forward and rounded or beveled off. Investigations of the air resistance of ships is also pointing the way for proper streamlining of superstructures.

Propeller Design.—In propeller design, model basin research has shown that for single-screw ships propellers with radially varying pitch give improved efficiency; that airfoil sections have better lift-drag properties than ogival sections, and that the inception of cavitation on high-speed propellers can be delayed to a certain extent by properly shaping the sections and the outline of the blade. Reductions in power of from 6 to 8 per cent for the

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same speed have resulted from this work.

Ship Behavior.—Experiments with self-propelled models in waves have yielded important results regarding the behavior of ships in bad weather. The damping characteristics of various ship forms when rolling have been studied and the merits of different bow forms with respect to pitching have been compared. Initial efforts have also been made to study hull vibration induced by the propeller by means of self-propelled models. The model basin has proved of immense value in improving the performance of ships and upon it the modern ship must depend for its superiority over existing designs.

Ship Trials.—At the Model Basin of the U. S. Navy in Washington a study and analysis of full-scale trials of ships have been conducted during the past year. The Model Basin staff has been analyzing photographic data of full-scale ship turning trials and making an exhaustive study of the performance of one of the types of torsionmeters commonly used on naval vessels. It has also designed and made experimental installations of torsionmeters containing certain improvements intended to increase the reliability of this instrument. Improved equipment for photographic observations of tactical trials has also been designed.

ATLANTIC LINERS

The building of larger and faster Atlantic liners by foreign countries has led to further study of this particular type of vessel in this country with the view of improving American service in the North Atlantic trade. Developments abroad are in the direction of increased size and greater speed which involve huge expenditures and make the question of profits in operation extremely doubtful. In fact, it is generally conceded that the original cost of 1,000-foot vessels like the *Normandie* and *Queen Mary* can be covered only partially by operating revenue. The only way in which such vessels can be built is with the aid of some form of government subsidy. In both France and Great Britain such aid has been

provided by the government on the grounds of upholding national prestige and for military reasons. In this country the belief is generally held that smaller and more economical vessels are more practical for this service.

In discussing this question before an international meeting of The Society of Naval Architects and Marine Engineers in New York last September, Ernest H. Rigg, the naval architect who designed the cabin liners *Manhattan* and *Washington* of the United States Lines, pointed out that in the past the cutting of one day from the passage of the Atlantic, a distance of approximately 3,000 nautical miles, has just about doubled the horsepower required to drive the ship. Seven-day ships averaged about 20,000 horsepower, six-day ships 40,000 horsepower, five-day ships 80,000 horsepower and four-day ships of the *Queen Mary* and *Normandie* class, 160,000 horsepower. The factor which has made the four-day ship a possibility, from an engineering standpoint, is the virtual doubling of the power developed per ton of machinery and fuel, a feat considered impossible ten years ago. A four-day steamship now requires only about 4,200 tons of fuel oil per crossing for propulsion.

Six years ago two outstanding naval architects in Great Britain set the limiting speed of the 1,000-foot liner at 36½ knots and of the 850-foot ship at 34 knots. Since 1931 there has been much discussion in support of a top speed liner of smaller dimensions, utilizing special steels, aluminum fittings and welding extensively in order to cut down the weight of the vessel. In the meantime the weights of propelling machinery and fuel are continually being reduced by the increase of steam pressures and temperatures and engineering advances in machinery and propeller design. Under these conditions it is believed that the dimensions of fast liners may be reduced from something over 1,000 feet to about 850 feet and a four-day schedule still maintained satisfactorily. While the longer ship will carry some 30 per cent more passengers if inside rooms are accepted, the power required for the two lengths is about proportional

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to the number of normal outside room passengers that can be carried, which leaves direct operating costs and revenue at about a stand off, with the shorter ship definitely ahead on first cost and carrying charges. The fact that two Admiralties have selected lengths of 850 feet for 32½-knot naval ships is also significant and adds weight to the contention that vessels of this smaller size are suitable for Atlantic express service.

While the modern Atlantic liner is a symbol of comfort and luxury, four-day liners of somewhat less size and luxury, but with possibly more comfort and certainly with more economy, check better with present-day business conditions than the 1,000-foot liners which are so heavily financed by their governments. The attainment of the four-day schedule on more economic grounds with smaller ships certainly looks more hopeful than any further advance in speed with present methods of propulsion.

PASSENGER ACCOMMODATIONS

Passengers expect and get, on board ship, practically all the amenities of good living that are available on shore. Not only are the passenger accommodations provided with every imaginable luxury but the liner companies are vying with each other in their efforts to entertain their passengers as well as to transport them safely to their destinations. Music has always been provided, but the facilities for dancing and for night club life are continually being extended. Moving pictures and radio broadcasting are now the thing and in some cases they are given in real theaters. Deck games have been extended to include full-size tennis courts. Swimming pools are standard, and separate pools are provided for different classes of passengers, with elaborate gymnasiums and baths. Conditioned air is provided in dining rooms and air-conditioning may be extended throughout the passenger quarters, although modern mechanical ventilation and temperature control in staterooms add materially to the comfort of steamship travel.

In order to meet the standards now demanded by the traveling public,

naval architects and shipbuilders are depending more and more upon the services of the architect ashore whose training and experience enable him to appeal more effectively to the amenities and esthetics of his fellow man. He knows when to call in the artist, the painter, the sculptor, the cabinet maker and the weaver, as well as the expert who is able to calculate, locate and diffuse the light which will blend their efforts into a harmonious effect which will give to the interior of the ship the appearance and atmosphere conducive to the comfort and well being of the passenger. With reverence for good proportions and balance and continuity of color, based on a scholarly understanding of architectural principles, the architect of shore structures can develop the conception of the naval architect to a satisfactory result. The necessities of life must be clothed in a practical, comfortable and artistic manner.

FIREPROOF CONSTRUCTION

During the past year experiments on fireproof ship construction were carried out by the United States Government on a sea-going vessel in the idle fleet of the Shipping Board Bureau. These tests were made by a special committee, headed by George G. Sharp, naval architect, and involved the duplication of conditions actually found on a ship at sea. Staterooms constructed of various materials were built on the ship in which fires were started and allowed to burn so that the effectiveness of the various forms of construction in controlling and resisting the fire hazard could be studied scientifically.

These tests proved the necessity of making each unit intact with the structure of the ship. It was found that many types of cabin enclosure panels thought to be satisfactory are most hazardous. The tests also showed that the incombustibility of the core of the panel is infinitely more important than that of the free surfaces, that face veneers of wood or other combustible material (not impregnated) are no hazard when the cores are incombustible,

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and that an appreciable quantity of wood or other combustible material (not impregnated) may be used as face trim without hazard.

It was found that the contents of a cabin may be consumed by a fire within a room properly constructed of panels with incombustible cores and face veneers and trim of wood or other combustible material under the most severe conditions without the fire going beyond the cabin. There was found to be little danger of transmitting a fire from one room to another through the ventilating systems, where incombustible panels are used in the construction of the rooms. Where the enclosures are of wood the combustible contents of the walls and ceiling are together almost twice that of the combustibles within the room, so that when a fire starts in the room a rapid progressive breakdown of the panels takes place, quickly resulting in an uncontrollable conflagration.

As a result of these tests tentative regulations have been drawn up for fireproof construction of vessels which will shortly be adopted by the Bureau of Marine Inspection and Navigation of the Department of Commerce. All new vessels will have to conform with these regulations and they will gradually be applied in modified form to existing tonnage.

In the new regulations it is assumed that a passenger vessel will be constructed in accordance with the rules of the American Bureau of Shipping, and that all decks in the hull and superstructure will be constructed of steel. There are two types of bulkheads required, designated by the symbols "A" and "B". The "A" bulkhead means a metal bulkhead lined or unlined, effective to maintain its structural integrity for one hour. The intent of the regulations is to provide by these "A" steel bulkheads subdivision of the hull and superstructure into main vertical zones, the length of which does not exceed 131 feet. Where these steel "A" bulkheads form the boundaries of accommodation adjacent to cargo holds, or form the fire-screen subdivision within the

accommodation, or the boundaries of stairway enclosures, they are to be insulated to prevent transmission of heat through the bulkhead, and are designated by symbol "A-1"; otherwise these "A" or steel bulkheads are the usual watertight subdivision or boundaries of enclosures usually constructed of steel.

The "B" bulkhead means an assembled panel bulkhead constructed of incombustible material effective to maintain its structural integrity for one-half hour. The "B" or assembled panel bulkheads form the boundaries of all staterooms and similar enclosures within any of the zones bounded by the "A" or "A-1" bulkheads. It is further provided that all stairway enclosures and corridors are safety zones in which there shall be no combustibles.

An adequate amount of wood trim of simple forms is permitted in enclosures, but where extensive use of wood construction is desired it may be permitted in association with automatic sprinklers. No restrictions are made with regard to furnishings. No detection systems are required in accommodation enclosures; but, if the owner elects to install these, the patrol rounds may be extended. There is a wide range of incombustible panels available, but a limited range that is capable of being worked in a similar manner to wood.

TANKER DESIGN

In the large tanker building program now under way there are several features of hull, equipment and machinery design that show marked improvement. The outstanding feature in hull design is the adoption of the arc form type of hull. The basic feature of the arcform design is the elimination of the sharp, square form of bilges which characterized the tankers of previous years. The arcform section, as compared with the old standard section, involves an increase of the vessel's beam which permits a rounding of the bilges with the same area of immersed section. This has the advantage of reducing the wetted surface, as well as improving streamline con-

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dition. The extent to which the beam is increased may vary to suit the designers.

Another feature of hull design in the new tankers is the adoption of the twin longitudinal bulkheads in preference to the more common form of centerline and expansion trunk bulkheads. The twin bulkheads provide greater longitudinal strength for the same weight. Also, they permit longer cargo tanks, which may eliminate one, perhaps two, transverse bulkheads. This adoption of long tanks is a distinct trend of recent design, for ships in which the intended service does not call for more complete subdivision.

A distinct innovation in the present construction is the adoption of the so-called "fluted" bulkheads for the cargo tanks in some of the vessels. The bulkheads are built up of welded panels of plating of a dished or pressed form. The bulged character of the elements is particularly effective in resisting fluid pressure, and permits a substantial saving in weight, with no extra cost, as compared with the conventional riveted bulkheads.

The current tanker program shows a decided advance in that, in some of these ships, electric welding is being applied for the first time to the strength members of large sea-going tankers. In earlier ships the bulkheads throughout the cargo space were of welded construction, as well as the center keelson and the main transverses. In later tankers the extent of the welding has been increased. It is understood that the bottom longitudinals are being welded to the shell plating, and it is predicted that the welding will include the side and deck longitudinals as well, in the near future. The largest tanker under construction is all-welded throughout the oil space.

Thus it is evident that welding is now past the elementary stage and has proven to be applicable to sea-going tankers. It is largely a shipyard proposition; difficulty in assembling presents obstacles, particularly in the shaped portions. But it is developing into a practical and desirable feature, even for these large oil-carriers. Present opinion also tends to favor welding from the standpoint of combating corrosion in tankers, as it is believed that much of the corrosion starts at the rivets.

There has been considerable study and research in the subject of tanker corrosion, both as to non-corrosive metal and corrosion-resisting coatings for the interior of the oil tanks. The latter are still in the experimental stage. Wrought iron, and special steel, have been used in small tanker construction, but non-corrosive material has not been incorporated in the structure of the tankers now building, except for iron rivets.

The present program shows only a slight increase in speed over the tankers built six years ago; 12 and 12½ knots sea speed now seems to be the vogue in commercial design.

An outstanding feature of the new tankers is the pronounced advance made in the design of propelling machinery. High efficiency and remarkable fuel economy have been achieved through the practical development of power units using high pressure and high temperature steam in which refinements have been made in heat balance. The efficiency of propulsion has also been improved by the adoption of contrapropellers and streamlined rudders.

Taken altogether, the current program represents a tremendous advance in tanker design, which will be reflected in lower costs of transportation in the petroleum industry.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

- ALLIED BUILDING METALS INDUSTRIES, 542 West 27th St., New York City.
- AMERICAN ASSOCIATION OF ENGINEERS, 8 S. Michigan Ave., Chicago, Ill.
- AMERICAN CERAMIC SOCIETY, 2525 N. High St., Columbus, O.
- AMERICAN CONCRETE INSTITUTE, 7400 Second Blvd., Detroit, Mich.
- AMERICAN CONSTRUCTION COUNCIL, 28 W. 44th St., New York City.
- AMERICAN ENGINEERING COUNCIL, 744 Jackson Place, Washington, D. C.
- AMERICAN FOUNDRYMEN'S ASSN., 222 W. Adams St., Chicago, Ill.
- AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Bellevue Court Building, Philadelphia, Pa.
- AMERICAN INSTITUTE OF CONSULTING ENGINEERS, 75 West St., New York City.
- AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS, 33 W. 39th St., New York City.
- AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, 29 W. 39th St., New York City.
- AMERICAN IRON AND STEEL INSTITUTE, 350 Fifth Ave., New York City.
- AMERICAN PETROLEUM INSTITUTE, 50 West 50th St., New York City.
- AMERICAN RAILWAY ENGINEERING ASSN., 59 East Van Buren St., Chicago, Ill.
- AMERICAN ROAD BUILDERS ASSN., Press Bldg., Washington, D. C.
- AMERICAN SOCIETY OF CIVIL ENGINEERS, 33 W. 39th St., New York City.
- AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS, 51 Madison Ave., New York City.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS, 29 W. 39th St., New York City.
- AMERICAN SOCIETY OF METALS, 7016 Euclid Ave., Cleveland, O.
- AMERICAN SOCIETY OF MUNICIPAL ENGINEERS, 4359 Lindell Blvd., St. Louis, Mo.
- AMERICAN SOCIETY OF NAVAL ENGINEERS, Navy Department, Washington, D. C.
- AMERICAN SOCIETY OF REFRIGERATING ENGINEERS, 37 W. 39th St., New York City.
- AMERICAN SOCIETY OF SAFETY ENGINEERS, 25 W. 39th St., New York City.
- AMERICAN SOCIETY FOR STEEL TREATING, 7015 Euclid Ave., Cleveland, O.
- AMERICAN SOCIETY FOR TESTING MATERIALS, 260 S. Broad St., Philadelphia, Pa.
- AMERICAN STANDARDS ASSN., 29 W. 39th St., New York City.
- AMERICAN STATISTICAL ASSN., 722 Woodward Bldg., Washington, D. C.
- AMERICAN WATER WORKS ASSN., 29 West 39th St., New York City.
- HIGHWAY RESEARCH BOARD OF THE NATIONAL RESEARCH COUNCIL, 2101 Constitution Ave., Washington, D. C.
- ILLUMINATING ENGINEERING SOCIETY, 29 West 39th St., New York City.
- INSTITUTE OF RADIO ENGINEERS, INC., 330 West 42nd St., New York City.
- NATIONAL AERONAUTIC ASSN., 1909 Massachusetts Ave., N. W., Washington, D. C.
- NATIONAL BOARD OF FIRE UNDERWRITERS, 85 John St., New York City.
- NATIONAL FIRE PROTECTION ASSN., 60 Battery March St., Boston, Mass.
- NATIONAL RESEARCH COUNCIL, Washington, D. C.
- NATIONAL SLATE ASSN., 644 Drexel Bldg., Philadelphia, Pa.
- NEW YORK ELECTRICAL SOCIETY, 29 W. 39th St., New York City.
- SOCIETY OF AUTOMOTIVE ENGINEERS, INC., 29 W. 39th St., New York City.
- SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS, 29 W. 39th St., New York City.
- SOCIETY FOR PROMOTION OF ENGINEERING EDUCATION, Univ. of Pittsburgh, Pittsburgh, Pa.
- THE ENGINEERING FOUNDATION, 29 West 39th St., New York City.
- WESTERN SOCIETY OF ENGINEERS, 205 Wacker Drive, Chicago, Ill.

DIVISION XX

GEOPHYSICAL SCIENCES

EARTHQUAKES AND VOLCANOES

By N. H. HECK

UNITED STATES GEOLOGICAL SURVEY

GENERAL

The year 1936, unlike 1935, was quite free from important earthquakes. There were no outstanding major earthquakes and few of any importance in the United States. In China there were four: In Szechuan Province on Dec. 18 (1935) and May 16; Kansu Province on Feb. 7, and Kwantung Province on April 1. In each case several hundred lives were lost because of the dense population. There were destructive earthquakes in Colombia, South America, on Jan. 9 and July 17, with loss of life, and one in Chile (Taltal Province) on July 13. A study of widely recorded earthquakes indicated that the interval between earthquakes as they were recorded on a number of instruments for the earth as a whole, was $14\frac{1}{2}$ hours, and the interval between major earthquakes, $6\frac{1}{2}$ days. It is probable that this average was approximated, even though none of the shocks was very great.

UNITED STATES AND ALASKA

California had no earthquakes of importance. The Montana earthquakes which started in October, 1935, continued into the second half of 1936, with a total of more than 2,000 felt shocks, several of which approached destructiveness. There was an earthquake at Umapine, northeast Oregon, on July 16, which cracked the ground, threw down chimneys and did other damage. There were several strong earthquakes in southeast Oklahoma on May 14 and July 11. Otherwise,

there was the usual number of scattered shocks in regions where shocks have been felt before. In Alaska, there was a strong earthquake on Oct. 23 east of Anchorage which was severe enough to cause great damage in a settled region.

The small amount of earthquake activity in the United States was actual, that is, it was not the result of lack of information, since earthquakes are now fully recorded in all parts of the United States. Reports of visible and felt effects of earthquakes are obtained and compiled at the Coast and Geodetic Survey, with the aid of other branches of Government, especially the Weather Bureau, and of many educational institutions including those which cooperate in the Jesuit Seismological Association, public service companies, and individuals. Reports from all who experience such shocks are welcome.

SEISMOLOGICAL STATIONS

For the accurate location of earthquakes there are now 38 seismological stations in the United States operated by the national government, educational, and scientific organizations, and individuals. One new station, that at Butte, Montana, came into existence during the year. An instrument for recording the vertical component of the earth's motion has been installed at Tucson, Arizona. In addition, there are two seismological stations in Alaska, 1 in Hawaii, 1 in Puerto Rico and 1 in the Panama Canal Zone. There are two in South

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America operated by American scientific organizations, Huancayo, Peru, (Carnegie Institution of Washington) and Montezuma, Chile, (Smithsonian Institution).

Many of these stations cooperate with the Government, St. Louis University, and a scientific news agency in forwarding to Washington and St. Louis information which makes possible the immediate location of all the widely recorded earthquakes, especially those in the Western Hemisphere, a similar service in Europe performing the same service for the Eastern Hemisphere. There is interchange of information between these services. During the past year the average has been about three such earthquakes per month.

EARTHQUAKE LOCATION AND OBSERVATIONS

The purpose of these stations is to make accurate locations of earthquakes possible. For earthquakes at a great distance from the instruments errors in location may be 20 miles or more; however, for those with instruments nearby, the error may not be more than one mile. This degree of accuracy is obtained only in such regions as parts of California and New England, where there are a sufficient number of suitable instruments and very accurate time-control which is of great importance. In general the uncertainty ranges from five to possibly 30 miles.

Until recently determination of the earthquake epicenter, that is, the point directly above the earthquake, was considered sufficient, but now earthquake students are not satisfied unless they know the depth. This is regularly done in California and New England, in Japan and in parts of Europe, but elsewhere the observations have usually been insufficient. No very deep earthquakes, as from 200 to 400 miles, have occurred in the United States but great progress has been made here in the study of those which have occurred elsewhere.

Until recently seismographs recorded only earthquakes at a distance, and strong near earthquakes put them out of commission. Instruments are now installed in a number of regions

subject to severe earthquakes, which are in action only during the earthquake but which record it, no matter how severe. There are 40 such instruments in California, four in Montana, and one each in Nevada and the Panama Canal Zone. Any of these instruments can be moved to a locality where none exist in case of strong earthquake.

The information received from such records is specially valuable in connection with the design of safer structures. Few strong motion records were obtained during the year and these were unimportant, but the essential thing is that the instruments are ready to record a great earthquake when it comes.

There are some related observations such as the determination of crustal movements that may be associated with earthquakes. Recent precise triangulation and leveling added to during the past year have made it possible to determine whether the crust has actually moved between observations. It is also possible to determine whether the earth is tilting since this has been associated with earthquake observation in Japan. Such observations are being made in California. No seismic sea waves nor so-called tidal waves of importance were recorded during the year.

VOLCANOES

No records of important volcanic activity have been received from the Aleutian Islands nor from Japan. Increased activity in earthquakes, as well as in fumaroles and solfataras indicated possibility of increased volcanic activity in Montserrat in the Lesser Antilles. Information regarding volcanoes is obtained chiefly from the monthly *Volcano Letter* of the U. S. National Parks Service. There was an eruption of Mauna Loa on Hawaii which lasted from Nov. 22, 1935, to Jan. 2, 1936. It behaved normally till late December, when the flow spread out to a front of 2,000 feet and started to move at about a mile a day directly toward Hilo, threatening the water supply, if not the city itself. The measure was adopted of dropping large bombs

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from airplanes at suitably selected places and this was apparently instrumental in stopping the flow. This action greatly perturbed the older Hawaiians, who predicted dire results from this disturbing of the Goddess Pele. However, they made their own prayers and held that they were

effective. There was no important activity at Kilauea during the year. There were persistent reports in March that the activity of Mount Lassen indicated an eruption but investigation showed that increased snowfall had resulted in greater steaming.

ECONOMIC GEOLOGY

By W. S. BURBANK

UNITED STATES GEOLOGICAL SURVEY

GENERAL

During 1936 an advance was recorded in the activities of governmental surveys, more especially by increased application of geologic work in engineering problems encountered in the work of the Soil Conservation Service of the Department of Agriculture, the Bureau of Reclamation, and the Corps of Engineers, U. S. Army. Expansion of geologic work in the National Park Service was concerned largely with educational activities. The transfer of the Geophysical Section of the Bureau of Mines to the U. S. Geological Survey, which occurred at the beginning of the current fiscal year, will result in broadening the scope of geophysical investigations undertaken by the Survey. Some results of the Soil Conservation studies of the Department of Agriculture have appeared in print. In the introductory portion of a recent report ("Siltng of Reservoirs," by Henry M. Eakin, U. S. Dept. Agri. Tech. Bull. 524, 1936) mention is made of research directed toward determining the effects of human activity on cycles of erosion. Recognition is given to two phases of erosive forces—the "geologic norm" or natural erosion, and "accelerated erosion" or man-induced erosion. New erosion cycles as a result of human activity are mostly still in early and immature stages, but must be recognized as a powerful factor in the economy of agriculture.

METALLIFEROUS DEPOSITS

The usual number of mining district reports were issued during the

year, representing both Federal and state cooperative undertakings. A report on the "Mineral Resources of the Region around Boulder Dam" (U. S. Geol. Survey Bull. 871, 1936) gives results of investigations within a radius of 200 miles of the dam to determine the availability of resources for industries that would consume power. The Texas state Survey issued volume 2 of the *Geology of Texas*, entitled "Structural and Economic Geology" (Univ. Texas, Bull. 3401, 1936). This volume contains geologic studies of the Terlingua quicksilver deposits and an extensive treatment of the State's potash deposits, as well as more or less comprehensive reviews of all the mineral deposits of the State. Nevada also issued several short reports on individual districts. Other reports representing Federal and state cooperative undertakings include one on the "Zinc and Lead Deposits of Northern Arkansas" (U. S. Geol. Survey Bull. 853, 1936), and one on a mining district in New Mexico (U. S. Geol. Survey Bull. 870, 1936). Two contributions were also issued by the U. S. Geological Survey on the geology and mineral resources of Alaska (Bulls. 862 and 866, 1936). Among papers not sponsored by Federal or state organizations are two of special interest by J. S. Brown, "Structure and Primary Mineralization of the Zinc Mine at Balmat, N. Y.," (*Econ. Geol.* vol. 31, pp. 233-258, 1936), and "Supergene Sphalerite, Galena, and Willemite at Balmat, N. Y.," (*Econ. Geology*, vol. 31, pp. 331-354, 1936.) These papers present a challenge to the common

belief that lead and zinc sulphides are not concentrated in large quantities by meteoric waters of surface origin. The precipitation of secondary (supergene) sulphides during the downward migration of surface waters containing mineral matter from the oxidized surface zone has been recognized for many years as a significant economic factor in numerous silver and copper deposits of the world. Supergene lead and zinc sulphides, however, have been recognized only in less than commercial amounts, and have, therefore, been considered little more than mineralogical curiosities. The Balmat deposit thus appears now to be unique in that this supergene enrichment attains economic magnitude for lead and zinc sulphides.

THEORY OF ORE DEPOSITION

Publications on the geology of metalliferous deposits reveal a continued attack on the controversial problem of ore formation. In the field of ore deposits associated with igneous rocks the controversy has assumed a physicochemical aspect with regard to the conditions under which the ore-depositing emanations are given off from the magmas or molten igneous sources. Two opposing thoughts were represented in current publications. The chemists and physicists generally maintain that the mineralizing emanations are acid and in the state of vapor when they leave the magma. The geologists on the whole hold to the opinion that acid gaseous vapors carrying the metals are not sufficient to account for the minerals deposited nor to yield the results of rock alteration observed near igneous bodies. Among recent contributions on the subject one by C. S. Ross on "Origin of the Copper Deposits of the Ducktown Type in the Southern Appalachian Region" (U. S. Geol. Survey *Prof. Paper* 179, 1935) gives detailed consideration to mineralogic and physicochemical features pertaining to this type of deposit. The conclusions point to a dominant role for hydrothermal solutions as carriers of the mineral matter that forms certain gangues of the ore assemblage and to a chemical in-

terchange between these solutions and the rocks traversed by them. In reviewing this paper, Dr. C. N. Fenner of the Geophysical Laboratory of Washington, points to the scarcity of evidence of direct transitions between the hydrothermal solutions and the residual liquids of the magma. He lays stress on seeking further field evidence in this critical transition region and holds that the evidence is as yet insufficient to prove with finality either mode of transfer. Walde-mar Lindgren ("Succession of Minerals and Temperatures of Formation in Ore Deposits of Magmatic Affiliations," *Am. Inst. Min. Met. Eng. Tech. Pub.* 713, 1936) has summarized his views and gives major importance to aqueous solutions. He holds that these solutions may have been in part originally acid, but after the development of alkalinity the influence of colloidal phenomena has aided in the transportation of the metals. Several papers published during the year have recognized that both acid oxidized vapors and alkaline solutions may have had a part in the formation of particular deposits described. These views to some extent appear to bridge the conflicting opinions of physicists and geologists.

PETROLEUM AND GAS

The American Association of Petroleum Geologists published late in 1935 the *Geology of Natural Gas*, a treatise on the principal known occurrences of natural gas in North America. Forty-seven authors contributed descriptions of the geologic environment of the different gas fields and treated the major problems of occurrence of the gas. Two papers covered the estimation of gas reserves, a subject heretofore inadequately treated. A volume on the *Geology of the Tampico Region, Mexico* by John M. Muir (Am. Assoc. Petroleum Geologists, 1936) is the first comprehensive report on an important oil-producing area hitherto but meagerly represented in American geologic publications. Among district and regional studies were two by the U. S. Geological Survey ("Salt Valley Anticline," *Utah, Bull.* 863, and "Monument Valley-Navajo Mountain

Region," *Utah, Bull.* 865, 1936), and also the structural map of Texas showing oil and gas fields that accompanies volume 2 of the *Geology of Texas* (Univ. Texas *Bull.* 3401). A number of short papers in the *Bulletin* of the American Association of Petroleum Geologists dealt with basic problems in the origin of petroleum and gas, and a paper by P. D. Trask and H. W. Patnode presented to the American Petroleum Institute, (preprint, Nov. 1936) considered "Means of Recognizing Source Beds." The paper treats of eight characteristics of sediments that have been studied with respect to their effectiveness for this means. As a result of research still in progress the conclusion was reached that certain characteristics are much more promising than others and the studies will probably prove useful to the industry. The most effective characteristics are those connected with the organic content of the beds, and the degree of volatility or reduction of that content. Also two papers of value to geologists concerned with the estimation of oil and gas reserves appeared in the *Oil and Gas Journal* ("Quantitative Determination of the Connate-Water Content of Oil Sands," by H. C. Pyle and P. H. Jones, vol. 35, no. 26, Nov. 12, 1936, and "Formation Volumes and Energy Characteristics of Gas-Caps," by B. H. Sage and W. N. Lacey, in the same issue). Estimates of oil and gas reserves have been based primarily on geologic data relating to the size and effective porosity of reservoirs. These papers indicate that a certain amount of the total effective pore space is actually occupied by connate waters and show to what degree the volume of oil occupying the remaining space in the pores is increased by solution with the gas. Corrections applied for these factors tend toward increasing the net recovery ordinarily assumed from oil sands and toward reducing the estimated remaining reserves.

COAL

With regard to the estimation of coal reserves, it was recently pointed out ("Conservation of Coal Resources," by G. S. Rice, A. C. Field-

ner, and F. G. Tryon, U. S. Bureau of Mines, Coal Economics Division, 1936) that in some districts a statistical bias may have tended to exaggerate reserves. Earlier measurements, made necessarily in faces of operating mines and at the surface where thinner portions of the beds were less likely to attract notice, would be revised on the basis of core drillings and more complete information now at hand. Thus, a number of recent more detailed geologic surveys point to a reduction in the national inventory. Studies of the composition and properties of American coals are being carried out in laboratories of the U. S. Bureau of Mines, the U. S. Geological Survey, and by some state geological surveys, notably those of Illinois, Pennsylvania, West Virginia, Ohio, and Kentucky. The U. S. Geological Survey issued reports on coal fields in Montana (*Bull.* 847-B, and 847-C), Utah (*Bull.* 852), and New Mexico (*Bull.* 860-B) during the year.

HYDROLOGY

Sponsored by the National Research Council, the American Geophysical Union published a large number of hydrologic papers in the current *Transactions* of the Union (*Am. Geophys. Union Trans.*, 17th Annual Meeting, Section of Hydrology, pt. 2, July, 1936). Those on underground water included symposiums on "Fluctuations of Ground-Water Level" and on "Contributions to Ground-Water Supplies." A paper by O. E. Meinzer and others on "Investigation of Effluent Seepage by the Channel Storage Method" described a method employed in determining quantitatively the contributions of ground water to stream flow.

The permeability and specific yield are properties of ground-water reservoirs that must be known in investigating the safe yield of a ground-water supply. The Thiem method, which has been employed in field work in this country for determining the permeability of strata, consists in pumping or measuring the rate of flow from a stratum of known thickness

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and obtaining measurements of the drawdown at known distances from the producing well. In a recent publication of the U. S. Geological Survey (*Water Supply Paper 679-A*, 1936) L. K. Wenzel describes the application of the method for the first time to the determination of specific yield.

Another significant development in the shaping of a nation-wide program of water-level measurements was the publication of *Water-Supply Paper 777* ("Water Levels and Artesian Pressure") by the U. S. Geological Survey, the first of a continuing series of annual reports.

MINERALOGY AND PETROGRAPHY

BY CLIFFORD FRONDEL

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MINERALOGY

Microchemical Methods in Determinative Mineralogy.—Microchemical methods for the determination of minerals have not received the attention which they deserve although the application of such methods satisfactorily meets most determinative problems. When only small amounts of substances are available for testing, microchemical methods are invaluable. During the past decade there has been an awakening of interest on the part of chemists and mineralogists in microchemistry, and the previous knowledge in the field, largely due to Behrens (1894) and Boricky (1877), has been improved and extended. In a recent publication, L. W. Staples of Stanford University, summarized and discussed those microchemical methods which have been found to yield the most satisfactory tests in mineral determinative work. Several new or improved methods are described, notably new ammonium paramolybdate tests for aluminum and manganese and an ammonium chloride test for iron. A dependable and relatively simple test for silicon, based on the sodium fluosilicate method of Boricky, is also described. Stress is placed on the production and optical identification of crystalline precipitates, rather than on the so-called color reactions.

Cleavage of Crystals.—It has long been recognized that a close interrelationship must exist between the geometrical arrangement of the constituent particles of a crystal and

the cleavage that it exhibits. Nevertheless, in spite of its long standing, the problem of cleavage has continued as one of great difficulty. M. D. Shappell of the California Institute of Technology has reviewed the various views that have been held as to the relation between cleavage and the structure of crystals, and has shown the necessity of distinguishing between the work of separation or cleavability of the crystal and the optical character of the fractured surface. From the electrical theory of matter in the crystalline state a formula is deduced for the cleavability, and values are calculated for a number of minerals. The results are in general agreement with the observed degrees of ease and perfection of cleavage, with a few exceptions.

Mineral Composition of Mine Dust.—Chemical analyses of mineral dust and of mill feed from the same mine indicate that certain minerals settle from the air more rapidly than others, with the result that they form a smaller proportion of the dust than of the rock or ore. This is most marked in the case of quartz. Minerals with a ready cleavage concentrate in the dust. Methods have now been described by T. L. Walker of the University of Toronto for determining the percentages of quartz and other mineral components in mine and mill dusts by means of x-ray diffraction patterns and of densitometer curves prepared from them. It is believed that the method will be of service in the study of dusts which give rise to silicosis.

The mineralogy of dusts causing silicosis has also been investigated by the late R. J. Colony, of Columbia University, by means of optical and x-ray study of the lung-ash of casualties from the disease.

Optics and Structure of Spherulitic Growths.—Spherulites and radial mineral aggregates have attracted the interest of workers in many diverse fields of science. Here may be mentioned the formation of stomach calculi, pineal bodies and bone structures in organisms, the occurrence of spherulitic growths in industrial glasses, and the development of lithophysae and similar growths in igneous rocks. During the past year, H. W. Morse and J. D. H. Donnay of Stanford University and Johns Hopkins University have published the results of an extensive study of the shape and optical properties of such growths as grown artificially by diffusion and chemical reaction in gelatin. Although spherulitic growths vary widely in external shape, and form under a wide range of environmental conditions, it was found that most of them belong to one and the same type of aggregation, due to radiating crystallization. The hypothesis is advanced and mathematically developed that the mechanism of formation involves a continuous branching out of fiber crystals from a nucleus in a sheaf or fan-like manner until a spherical shape is attained.

New Minerals.—A supplementary volume, *Neue Mineralien* (Berlin, 1936, 320 pp., 42 figs.), has been published to Hintze's *Handbuch der Mineralien*, dealing with the many new mineral species which have been described during the 44 years that the main work was in progress. The discovery of a new locality for *pyroxmangite* has provided material for a complete study of this little known triclinic manganese and iron pyroxene. Comparative studies have proved the identity of *sobralite* with *pyroxmangite*, and have indicated that the latter species is distinct from *rhodonite*, which it closely resembles. The new mineral *lapparen-lite* is a hydrous sulphate of alumi-

num occurring as colorless monoclinic crystals associated with *coquimbite* and *chalcantinite* at Tierra Amarilla, Chile. The term *paracoquimbite* has been applied to a rhombohedral modification of *coquimbite* from the same locality. Other new minerals reported from Tierra Amarilla are *amarillite*, a yellow, monoclinic, hydrous sulphate of sodium and iron, and *leucoglaukite*, a hydrous ferric silicate occurring in prismatic hexagonal crystals associated with *copiapite* and *amarillite*.

A new colloidal hydrous oxide of cobalt and copper found associated with *malachite* and *chrysocolla* at Katanga, Belgian Congo, has been named *trievite*. Some question arises as to the validity of the species due to the impure character of the mineral; a not very dissimilar mineral, *mindigite*, was described from the same locality a few years ago. *Hydroxylapatite*, previously known only as a hypothetical end member of the *apatite* group, has been found in a relatively pure state in serpentine and talc quarries on the Hoskenthal, Uri, Switzerland. The new mineral *bermanite*, named in recognition of the contributions to mineralogical science made by Dr. Harry Berman of Harvard University, is an orthorhombic hydrous phosphate of manganese. It occurs as tabular reddish brown crystals associated with *triple* in a pegmatite dike near Hillside, Arizona. *Beiyinite* and *oborite* are ill-defined rare earth minerals from Suiyan Province, China, where they occur in fluorite veins in an iron ore deposit. Both minerals resemble *bastnaesite*. *Aidyrlite*, from the nickel ore deposits at Aidyrly, in the Urals, is a massive hydrous silicate of nickel and aluminum, forming small veins in limestone.

A study of *wollastonite* has shown that this mineral, hitherto variously regarded as either monoclinic or triclinic, comprises two modifications, one triclinic, the other monoclinic. It is proposed to restrict the name *wollastonite* to the commoner triclinic mineral typically developed in contact metamorphosed limestones, and to apply the name *parawollastonite*

to the rarer monoclinic variety that is found chiefly in limestone blocks ejected from volcanoes. The discovery in nature of *clinoferrosilite*, a nearly pure monoclinic iron metasilicate, is unexpected, since studies of artificial melts have suggested that this substance cannot occur as a crystalline compound. The mineral was identified in lithophysae in obsidian from several localities, associated with *fayalite*, *cristobalite* and *biotite*.

New Publications.—Among the new books published during the year, one of popular interest is *A Key to the Precious Stones*, by L. J. Spencer (London, 1936, 237 pp., 57 figs.). The book is written by a distinguished mineralogist and authority on gems and should prove most interesting and helpful to all students and lovers of precious stones. *The Minerals of Franklin and Sterling Hill, Sussex Co., New Jersey*, by C. Palache (U. S. Geol. Survey Prof. Paper 180, 1935, 135 pp., 199 figs., 20 pls.), contains a detailed account of the 148 mineral species known from this unique mineral locality. In addition to the compilation of all previous data, many new optical and crystallographic data are given. Two new species are described, *hydrohetaerolite*, and magnesian *chlorophoenicite*. The new edition of *Mineralogy*, by E. H. Kraus, W. F. Hunt and L. S. Ramsdell (New York, 1936, 638 pp., 812 figs.), contains a number of changes in the sections dealing with crystal structure and x-ray analysis, in recognition of the rapid advance in these phases of mineralogy during the past few years. *Minerals Classed According to Cleavage and Crystal Habit*, by W. A. Seaman (Houghton, Mich., 1936, 51 pp.), is a determinative guide useful for the sight identification of minerals. *Lehrbuch der Mineralogie*, by W. Schmidt and E. Baier (Berlin, 1936, 320 pp., 214 figs.), is primarily intended for engineers and chemists.

PETROGRAPHY

Opaque Ore Minerals in Common Igneous Rocks.—The occurrence of opaque oxide and sulphide minerals as normal minor constituents

in the common igneous rocks is a familiar fact of petrography, but, although the subject has an important bearing on both the origin of rocks and of ore deposits, it has hitherto received little detailed attention. In a comprehensive investigation W. H. Newhouse of the Massachusetts Institute of Technology has described the occurrence and distribution of such minerals in ordinary igneous rocks of a wide range of composition and texture. The minerals, present in most cases in only minute amounts, were studied microscopically in polished sections and thin sections.

It was found that both the oxides and the sulphides varied in amount, grain size, species, and position in the crystallization sequence in rocks of different composition and texture. The most frequently occurring forms of the opaque oxides are *magnetite*, *ilmenite* and *magnetite-ilmenite* exsolution intergrowths. *Magnetite* was found to be more abundant in the acidic and extrusive rocks and *ilmenite* in the more basic rocks; further, the oxides were generally of early crystallization in the acidic rocks, while in many of the basic rocks these minerals, in part, at least, finished their crystallization later than the normal rock-forming silicates.

The accessory sulphide minerals, including *pyrite*, *pyrrhotite* and *chalcopyrite*, occur more abundantly in the basic types of igneous rocks. These minerals, like the opaque oxides, were found to have continued their crystallization until a late stage of consolidation of the magma in the basic types of rocks, as contrasted with an early period of formation in the acidic rocks. Both of these features indicate a higher solubility for the sulphides in the basic rocks, and support the view that many titaniferous ore deposits, and certain pyritic and pyrrhotitic ore concentrations, have been formed as the end products of crystallizing rock magmas. On the other hand, evidence is also afforded that many types of ore deposits, such as those containing lead and zinc, have not been formed by the concentration of the metals in the last residues of magmatic crystallization.

Origin of the Peekskill Emery Deposits.—One of the few commercial emery deposits in America is found at Peekskill, New York, where it is associated with a complex of basic plutonic igneous rocks known as the Cortlandt series. The origin of the rocks has often been under discussion, and several theories of origin have been proposed, including direct crystallization from a highly aluminous igneous magma, absorption and recrystallization of aluminous sedimentary material (wall-rock) by the magma, and contact metamorphism. New evidence brought out by J. W. Butler of Columbia University from detailed field and petrographic studies of the deposit has disclosed objections to the earlier theories and has led to a revised theory of genesis. It is now held that the emery deposits are contact metamorphic in origin, but were formed by highly aluminous emanations that were released during the early liquid-magmatic stage of the basic Cortlandt in-

trusives and entered and replaced the country rock.

New Publications.—*The South Norwegian Hyperites and their Metamorphism*, by W. C. Brögger (Oslo, 1936, 421 pp., 148 figs.), is a memoir chiefly treating of corona and reaction structures in a wide variety of hypersthene-rich gabbroic rocks. The metamorphism of such rocks, and the origin of albitites and related rocks is also discussed. *Introduction to Petrofabric Analysis*, by H. W. Fairbairn (Kingston, Ont., 1935, 141 pp.), presents a brief outline of the purposes and concepts of petrofabric analysis. *Lehrbuch der Kohlenpetrographie*, by E. Stach (Berlin, 1935, 293 pp., 173 figs.), is the first textbook to present a systematic description of coals, a description of the petrographic and other methods employed in studying them, and interpretations of the objects and textures seen under the microscope. A bibliography of 919 titles is included.

TERRESTRIAL MAGNETISM AND ELECTRICITY

BY JOHN A. FLEMING

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GENERAL

The origin and maintenance of the Earth's magnetic and electric fields constitute the basic problems of terrestrial magnetism and terrestrial electricity. These problems have so long baffled investigators that some deem it necessary for their solution to postulate an entity which may hold the key to both but which is as yet unknown to physics. Others continue to expect that, as the details of the phenomena become more completely known and are adequately integrated, a solution requiring no new postulate will be evolved. On the first view, investigations of the fundamental constituents of matter and their interactions would hold promise of indicating the way to a solution of these age-long riddles. On the other view, present attention should rather be directed toward ob-

taining more information about the phenomena themselves and about other gross features of Earth physics upon which they depend. Taking cognizance of these two views, research in these fields is now generally planned to embrace both and thus to cover the middle ground between them in so far as that is possible.

Approach in the laboratory through investigations in nuclear physics during 1936, directed to disclosing fundamental facts bearing on the nature of magnetism and of the Earth's magnetic and electric fields, measured the forces acting between protons. Utilizing the high-voltage equipment and technique developed at the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, it was established that over extremely short distances the "Coulomb" forces are not

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applicable and that repulsion between like electric charges is counteracted by the equivalent of an attractive force. This binding force of atoms, among the most fundamental in nature, is responsible for the aggregation of neutrons and protons which form all the heavier chemical elements. In addition to such research of the microcosmos of the atomic nuclei, and other experiments in the laboratory, programs were pursued for investigating the Earth's magnetic and electric condition through observation of the experiments performed by Nature free of the controls exercised in laboratories. Continuous registrations of the magnetic and electric state of the Earth and of its atmosphere were obtained at some 15 observatories in the Western Hemisphere and reductions and interpretations of the results were conducted.

FLUCTUATIONS IN THE EARTH'S PERMANENT MAGNETIC FIELD

Although the cause of the permanent magnetic field of the Earth has not yet been determined, definite progress has been made in the understanding of its fluctuations. All known fluctuations of the Earth's field except those of long period—that is, the secular change—are demonstrably due to two causes; one acts above the Earth while the other acts within it. The more rapidly varying aspects of magnetic effects of internal origin seem attributable to induced electric currents circulating within the conducting substance of the Earth. Through cooperation between several organizations, earth-current registrations have been obtained from widely separated places and there resulted a world-map of the electric currents circulating within the Earth and of their shift from place to place throughout the day.

CIRCULATION OF ELECTRIC CURRENTS

From magnetic observations alone, modes of circulation of electric current in the atmosphere and in the Earth may be inferred. Such current-systems, both inside and outside

the Earth, which would give rise to the world-wide features of magnetic storms, were constructed by formal mathematical analysis. They revealed that the currents circulate about the geomagnetic axis of the Earth with maximal densities of flow in the tropics and in the auroral zones. The currents which would give rise to magnetic "bays"—fluctuations in the Earth's magnetism of duration about an hour, more or less—have also been inferred. The principal aspect of these currents is a westward flow in the high atmosphere along the auroral zone on the dark side of the Earth with the associated return flow in the high atmosphere and the concomitant currents induced within the Earth. The hypothesis has been advanced that these currents are caused by movements of the atmosphere through heating where auroral displays occur.

That the atmosphere may have the required properties for the transmission of such currents in its outer limits at a great altitude—designated the ionosphere—was first indicated by the phenomena of terrestrial magnetism itself and independently, many years later, by the propagation of radio waves. The pioneer experiments began in 1925 at the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, and subsequent developments have resulted in equipment and technique for more precise investigations of the ionosphere by radio methods. With these methods and investigations, the first rather vague qualitative concepts of the ionized upper atmosphere have progressed to a more sharply defined quantitative concept of several major ionized regions. Each of these, while merging into adjacent regions, has certain specific characteristics, a knowledge of which is fundamental to theories of the magnetic fluctuations. Already the ionospheric observations have supplied some basis for discriminating between certain theories of the regular diurnal fluctuations in terrestrial magnetism and have supplied supporting evidence for the

theory proposed to explain magnetic bays.

Extensive fade-outs of the radio signals which are transmitted by reflection from the ionosphere were found during 1936 to be associated with sudden increases in hydrogen-light in the region of sunspots. These fade-outs, apparently confined to the daylight portions of the Earth, are accompanied by sudden changes in the Earth's magnetism and in the electric currents flowing in the Earth's crusts. The more pronounced manifestations of these phenomena are evident over periods of the order of 45 minutes. That their solar cause is transmitted to the Earth with the velocity of light has been clearly established. The discovery of these associated phenomena opens a new approach to the study of electric and magnetic effects taking place in the Earth and its atmosphere. Preliminary considerations indicate that ultra-violet or other short-wave radiation originating in the disturbed regions on the Sun produce increased ionization in the lower region of the ionosphere. Impinging radio waves are absorbed due to high collision-frequency in the region, while electric currents already flowing there, which give rise to the ordinary diurnal variations of terrestrial magnetism, are augmented due to the improved direct-current conductivity.

SPECIAL OBSERVATIONS AND STUDIES OF IONS

While the region of the atmosphere below the ionosphere may play no part in the phenomena of terrestrial magnetism, the phenomena of atmospheric electricity depend vitally upon the processes of ionization and distribution of electric charge in these lower regions. Special observations and studies of formation, mobility, and abundance of various classes of ions and their inter-relationships clearly demonstrate the presence of ions which move in an electric field with velocities between those of the well-known slow- and fast-moving ions, and indicate that both the abundance and mobility of these intermediate ions vary throughout the 24 hours.

Opportunity to measure the electric conductivity of the air up to an altitude of 22 km (14 miles) was supplied by the flight of the National Geographic Society—Army Air Corps stratosphere balloon, *Explorer II*, which carried the necessary recording apparatus. The principal deductions resulting from this flight are: (1) the upper regions of the atmosphere are at 400,000 volts higher potential than the Earth; (2) the conductivity at 60,000 feet is about 100 times as great as at the Earth's surface; and (3) the previously accepted relationship between air-pressure and recombination of ions does not hold.

Since studies in terrestrial magnetism and electricity must be approached frequently from a statistical point of view, investigations in mathematical statistics were actively continued. Particular attention was devoted to deriving simplified methods adequate to develop correctly the morphology of time-curves describing cyclic and periodic phenomena, as compared with random fluctuations. Too frequently the treatment of cyclic phenomena by various methods disregarding the theory of mathematical probabilities has hindered and even masked proper interpretation of physical significance.

AMERICAN ORGANIZATIONS DOING MAGNETIC WORK

Government Agencies.—United States Coast and Geodetic Survey—Maintenance of five magnetic observatories at Cheltenham, Tucson, Sitka, Honolulu, and San Juan, and reductions of results; magnetic surveys for secular variation; magnetic surveys of air ports and water ports; isomagnetic charts of United States and territories; isogonic charts for aviators; instrumental development; reduction of Polar-Year data; magnetic data for broadcast of cosmic data under the auspices of Science Service. United States Hydrographic Office—Isomagnetic charts of the world. United States National Bureau of Standards—Ionosphere; radio field-intensities; ionospheric data

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for broadcast of cosmic data under the auspices of Science Service.

United States Naval Research Laboratory—Radio-wave propagation; ionosphere; direction of static; electricity of thunderstorms.

Smithsonian Institution—Solar radiation; atmospheric ozone.

Canadian Dominion Observatory—Magnetic survey of Canada and territories for secular variation.

Meteorological Service of Canada—Magnetic observatories at Agincourt and Meanook.

Mexican National Astronomical Observatory—Magnetic survey and magnetic observatories at Teoloyucan.

Brazilian National Observatory of Rio de Janeiro—Magnetic observatory at Vasouras and magnetic survey.

Argentine National Meteorological Office—Magnetic observatories at Pilar, La Quiaca, and Orcadas (South Orkneys).

Universities.—University of Alaska—Aurora, ionosphere.

University of California at Los Angeles—Laboratory, auroral, and night-sky spectra.

California Institute of Technology—Cosmic-ray survey and laboratory investigations.

University of Chicago—Cosmic-ray survey and laboratory investigations.

University of Colorado—Cosmic rays.

Colorado School of Mines—Magnetic survey; earth-resistivity; application of magnetic and electric methods to prospecting.

Stanford University—Atmospheric electricity.

University of North Carolina—Magnetic survey.

Private Organizations.—Bartol Research Foundation of the Franklin Institute—Cosmic-ray survey and laboratory investigations.

American Telephone and Telegraph Company and Bell Telephone Laboratories—Ionosphere; radio-wave propagation; direction of static; earth-currents.

Carnegie Institution of Washington Mount Wilson Observatory—Magnetic activity; magnetic observatory at Mount Wilson; sunspots; solar ultra-violet light; solar spectroheliograms; solar data for Ursigram broadcasts of cosmic data.

Department of Terrestrial Magnetism—World magnetic survey and secular-variation research; geomagnetic charts of entire Earth; maintenance of magnetic and electric observatories at Huanayo (Peru) and Watheroo (Western Australia); observations for determination of corrections and researches on magnetic standards at observatories; ionospheric investigations in Peru, Australia, and at Washington; electricity of the lower atmosphere; cosmic rays; earth-currents; reductions of auroral and magnetic data; reductions of Polar-Year data at Point Barrow and College-Fairbanks; instrumental development.

Society of Jesus.—Magnetic observatory of San Miguel, near Buenos Aires, Argentina; atmospheric electricity.

OBSERVATORIES

The five magnetic observatories of the United States Coast and Geodetic Survey at Cheltenham, Honolulu, San Juan, Sitka, and Tucson continued operation without interruptions. The Survey has cooperated with other interested organizations in maintaining registrations in its observatory-program. Among these were the Department of Terrestrial Magnetism, Carnegie Institution of Washington, in the development and tests of instruments, particularly at Cheltenham; the American Telephone and Telegraph Company in earth-current registrations and the Carnegie Institution of Washington in atmospheric-electric registrations at the Tucson Observatory. Much attention was given to improvement of observatories, instruments, and methods to provide more accurate results and to reduce the amount of

work required to prepare the data obtained for publication.

The observatories of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington at Watheroo, in Western Australia, and Huancayo, in Peru, continued photographic registrations of the magnetic, atmospheric electric, and earth-current elements and associated meteorological and solar data. The Institution continued cooperation in the atmospheric-electric work being done at the Apia Observatory in Western Samoa. Similar attention was paid also to the maintenance of international magnetic standards through intercomparison of instruments of observatories in China, Australia, Germany, England, United States, and Peru. Control of standards were also effected through observations with special instruments provided by the International Association of Terrestrial Magnetism and Electricity indirectly between the United States, Japan, Denmark, Finland, Germany, and the U. S. S. R.

Other observatories functioning throughout the year in North and South America were Agincourt and Meanook, Canada; Teoloyucan, Mexico; Pilar, La Quiaca, Orcadas (South Orkneys), and San Miguel (near Buenos Aires), Argentina, and Vasouras, Brazil.

MAGNETIC SURVEYS

In Canada the Dominion Observatory continued observations to determine secular variation of the Earth's magnetism through the re-occupation of earlier stations. The United States Coast and Geodetic Survey prepared a new isogonic map showing lines of equal declination for Jan. 1, 1935 in the United States. The rate of change in the magnetic declination, especially in the eastern part of the United States has altered greatly in the last few years. The state-control surveys of Massachusetts, New Jersey, and Connecticut made observations of magnetic declination during the year. In connection with the coastal surveys of the Survey other observations of declination were made by the Coast

and Geodetic Survey on the coasts of California, Alaska, and the Philippine Islands.

The Carnegie Institution of Washington through its Department of Terrestrial Magnetism did much field work during 1936, more particularly with reference to the determination of secular-variation data at repeat-stations. Such observations were made in China, in Australia and the Pacific Islands, in Europe, in North America, and in South America.

The resumption of the magnetic and electric surveys of the oceans was assured by the completion of design for the British Admiralty of its non-magnetic vessel *Research* and by the letting of the contract in September, 1936 to construct that vessel.

RESEARCH IN IONOSPHERE

The organizations chiefly concerned in ionospheric research include the National Bureau of Standards through its stations near Washington, at Beltsville and Meadows, Md., the Carnegie Institution of Washington through its station in Kensington, Md., and its Huancayo and Watheroo observatories in Peru and Western Australia, the University of Alaska at College, Alaska, and the Central China College, Wuchang, China, the last two acting in cooperation with the Carnegie Institution.

From this year's work a better world-wide picture of the ionosphere has been obtained. In reviewing the results three major developments merit especial attention. (1) The maximum daily ion-density of the highest region of the ionosphere occurs in both the Northern and Southern hemispheres during the same time of year. What was thought originally to be a seasonal effect when viewed from the Northern Hemisphere alone is now proven to be predominantly a more complex annual one, probably changing everywhere over the Earth in much the same manner. This discovery renders untenable much hypothetical argument, especially concerning the temperature of the upper stratosphere, which was based upon the assumption that the effect is a simple sea-

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sonal one, and emphasizes the necessity of world-wide observations on such a basis as will elucidate the essential facts. (2) Special experiments conducted near the geomagnetic equator at the Huancayo Magnetic Observatory to determine the polarization of vertically downcoming radio waves show that such waves are plane-polarized in mutually perpendicular planes, as is predicted by theory. (3) Development of the first equipment of its kind to operate over the necessary frequency-range continuously and automatically to record changes with time in the structure of the ionosphere.

The complexity of the problem precludes the possibility of a complete solution by a single group of investigators. Efforts are being directed toward standardized methods of exchange of data. Conferences on the ionosphere held in 1935 and 1936 have provided the initial steps in this direction, and a basis has been established for the extension of this exchange of information.

MAGNETIC INSTRUMENTS

Following experimental and theoretical work in the development of the universal type of electromagnetic magnetometer for absolute measurements of the components of the Earth's magnetic field, the alternating-current method of detection was applied successfully in connection with the earth-inductor. A new primary standard for determination of all the magnetic elements and induction components was completed.

TERRESTRIAL ELECTRICITY

As steps toward the solution of the outstanding problem of atmospheric electricity—the establishment and maintenance of the Earth's negative charge—it seems desirable that (a) a more complete record of the facts for the Earth as a whole be obtained and (b) a better understanding be sought of how, under the influence of auxiliary factors, the observed facts are given local color. The first of these is being met by continuous registration of the air-potentials and of the two components (positive and

negative) of air-conductivity, as well as of the principal meteorological elements at the observatories. The second is being furthered by studies in the laboratory of some of the factors affecting air-conductivity.

From the flight of the National Geographic Society and Army Air Corps to the stratosphere the air-conductivity was found in general to increase with altitude. Discussion of the values so obtained and values calculated from cosmic-ray data showed the latter to be the greater, the discrepancy increasing with altitude. This and other circumstances led to the surmise that the recombination-coefficient for small ions varies, not as the first power of the pressure but more nearly as the one-half power.

While the region of the atmosphere below the ionosphere may play no part in the phenomena of terrestrial magnetism, the phenomena of atmospheric electricity also depend vitally upon the process of ionization and distribution of electric charge in these lower regions. Special observations and studies of formation, mobility, and abundance of various classes of ions and their interrelationships demonstrate the presence of ions which move in an electric field with velocities between those of the well-known slow- and fast-moving ions, and indicate that both the abundance and mobility of these intermediate ions vary throughout the 24 hours.

EARTH-CURRENTS

Examination of the earth-current records for a number of years from Tucson, Huancayo, and Watheroo, to determine if any constant component or long-period variation is detectable, showed that the daily mean values of potential on characteristically disturbed and calm days differ consistently by a small amount. This suggests that a part of the current flowing during disturbances or magnetic storms is unidirectional for the day and is the first definite indication of a component in earth-currents with period greater than one day. The effect, which may be regarded as the earth-current aspect of the world-

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wide component of magnetic storms, is small in magnitude, not more than a few per cent of the range of normal diurnal-variation.

COSMIC RADIATION

Three precision cosmic-ray meters were in operation through the efforts of the Carnegie Institution of Washington, for accumulation of accurate data for investigation of time-changes in the cosmic radiation; one during the whole year at the Cheltenham Magnetic Observatory, one from the early part of 1936 at the Christchurch Magnetic Observatory in New Zealand, and the third from June of 1936 at the Huancayo Magnetic Observatory in Peru. Arrangements were also made for the installation of a fourth meter at Teoloyucan, Mexico, early in 1937. Preliminary analyses of the data obtained at Cheltenham during April, 1935, to October, 1936 indicated barometric coefficients which are statistically in agreement and further that the coefficients do not change with time of day. Harmonic analyses of the data, after applying corrections for barometric pressures, indicate the existence of a statistically real diurnal variation. Photographic cosmic-ray records were obtained throughout the year on the passages of the steamship *Aorangi* between Canada and Australia and also on five passages of the steamship *Santa Lucia* between New York and Valparaiso.

A. H. Compton of the University of Chicago reports the establishment of an effect which seems to be caused by rotation of the Milky Way. He reports also that results obtained on trips in the Pacific Ocean indicate that most cosmic-ray primary rays consist of electrical particles of energies greater than 19×10^9 electron-volts.

T. H. Johnson of the Bartol Research Foundation of the Franklin Institute continued his investigation of the asymmetry of cosmic radiation. He also began radio-balloon measurements of cosmic rays in the stratosphere.

R. A. Millikan of the California Institute of Technology reports evi-

dence that incoming electrons (positive and negative), not protons or other heavy charged particles, produce practically all the atmospheric ionization that is due to incoming charged particles at all. At altitudes of 26,000 feet he finds no difference larger than five per cent—about the limit of experimental uncertainty—in cosmic-ray ionization in the Philippines and in Peru. He also finds, from successful sounding-balloon records, much smaller cosmic-ray ionization in electroscopes at 92,000 feet than at 64,000 feet. He reports instrumental developments by which ten-fold accuracy is obtained over older technique.

INTERNATIONAL COOPERATION

It is essential that, in the treatment of Earth phenomena involving data secured in all parts of the world, there be cooperation between nations as regards the plan, character, and coordination of instruments, methods, and theoretical treatment. The Association of Terrestrial Magnetism and Electricity of the International Union of Geodesy and Geophysics and the Commission of Terrestrial Magnetism and Atmospheric Electricity of the International Meteorological Organization are the two international bodies concerned with these matters. During Sept. 16-26, 1936, the Sixth General Triennial Assembly of the International Union of Geodesy and Geophysics was held at Edinburgh, Scotland. In connection with that Assembly the Association of Terrestrial Magnetism and Electricity, which with six other associations relating to the Earth sciences—geodesy, seismology, meteorology, oceanography, volcanology, and hydrology—held meetings to discuss questions relating to its fields. The Americas were well represented by delegates from various governmental and private research organizations and universities at these meetings.

LISBON ASSEMBLY REPORTS

Good progress in geophysics, during the triennium since the Lisbon Assembly, was reflected in the reports

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received from Association officers and the committees reporting for each adhering nation. Particularly significant were the important advances indicated by the president and the suggested discussions which future geophysical organizations might advantageously follow. Reports presented dealt with the study of sudden commencements and magnetic storms, auroras, magnetic characterization of days, relations between solar activity and terrestrial magnetism, results of the Second Polar Year, distribution of new observatories for terrestrial magnetism and electricity, magnetic secular-variation, electrical characterization of days, collaboration to promote the study of the influence of the Moon on geophysical phenomena, methods and codes adequately to describe magnetic disturbances and perturbations, comparison of magnetic standards, international classification of Greenwich days prior to 1906, and international agreement on uniform epochs and methods in preparation of magnetic charts. All these subjects are of great importance and pertinent to work being done in North and South America. There were some 18 committees appointed to deal with various aspects of the fields of terrestrial magnetism and electricity before the next triennial assembly—to be held in Washington, D. C., U. S. A., probably in September, 1939. Fifteen of these committees have American members.

Nineteen resolutions were adopted; practically every one of these relates in some measure to research and progress in the Americas. They may be briefly indicated as follows: preparation and publication of list of magnetic observatories and thesaurus; distribution of magnetic publications; control of instruments and observatories; magnetic- and electric-activity figures; maintenance of international magnetic standards; convention as regards designation of earth-current components; means to permit complete registration of magnetic storms, especially because of the expected increase in number and magnitude with the increasing solar activity; reproduction on film and distribution

of magnetic records; distribution of additional installations to record earth-currents particularly on islands surrounded by the sea; need of continuing registration of atmospheric-electric phenomena at existing observatories and at new observatories, as well as the distribution of augmenting observational data about the electrical state of the troposphere and stratosphere over land and sea; increased magnetic surveys by all governments to realize a minimum program for the determination of variations with time in the Earth's magnetic and electric fields; a suggestion that other maritime nations than Great Britain, U. S. S. R., and Japan—already engaged in magnetic work at sea—undertake the construction of non-magnetic vessels suitable for such work; classification of literature on terrestrial magnetism and electricity on international decimal system; prompt publication of accumulated data; investigations of those regions of the Earth where marked pulsations of its magnetic field are recorded, especially in Iceland; effect of electric railways on existing observatories; revised method of publishing magnetic-activity figures.

The importance of developments and discoveries as above referred to on the relation of solar activity with the radio-wave communication and magnetic and electric perturbations was recognized and a joint committee of the Association and of the International Scientific Radio Union was designated to forward collection, co-ordination, and standardization of methods of publication to permit more effective discussion and interpretation which doubtless is of considerable significance to radio communication.

Active part was taken by the members of the United States Coast and Geodetic Survey, the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, and representatives of several American universities in the meetings of the Association through the presentation of reports and papers and by attendance of delegates.

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PUBLICATIONS

The Johns Hopkins Press continued publication of the quarterly *Journal of Terrestrial Magnetism and Atmospheric Electricity*, that journal completing its forty-first annual volume in 1936. It is international in character and includes current developments in the fields of terrestrial magnetism and electricity with bibliography of important publications.

The American Geophysical Union, representing the United States as a unit of the International Union of Geodesy and Geophysics, was in-

creasingly active during 1936. Two volumes of *Transactions* of its annual meetings held in Washington during April give progress-reports and articles concerning geophysical developments in North America.

Science Service compiled and broadcast daily throughout the year from the Arlington Station of the United States Navy the American Ursigrams of geophysical data.

Magnetic Declination in the United States during 1935 was published by the United States Coast and Geodetic Survey, as also *Magnetic Declination in California and Nevada*.

METEOROLOGY AND CLIMATOLOGY

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GENERAL

During 1936 the tendencies indicated for meteorology in 1935 were in general accelerated or strengthened. The diffusion of the practical use of air-mass analysis into the routine work of the Weather Bureau, of aviation and of other meteorological services; the survey of long-range forecasting possibilities by governmental agencies and various individuals; the increase in meteorological research into problems of aërological instruments and into theoretical bases of various practical matters; the general extension and improvement along much needed modern lines of nearly all branches of the Weather Bureau's varied services; the ravages of another severe drought year, and finally, the increased demand for technical services of professional meteorologists and climatologists in the sphere of governmental public works, land use programs, engineering, and teaching. In addition there are some new tendencies and activities to report for 1936.

PROGRESS IN AIR-MASS ANALYSIS

The tremendous interest and enthusiasm, reported last year, for

learning and generally adopting the ideas and technique of frontal and air-mass analysis methods of analyzing the weather map, particularly as an aid to forecasting but also as a general approach to both theoretical and practical meteorological and climatological problems, continued unabated in 1936. It is rapidly diffusing down into the understanding of the great mass of professional workers in our field as well as in many related and dependent fields. This is all very much to the good, even though the understanding is still rather naïve and inadequate in many quarters. As rapidly as it can the Weather Bureau is evolving a workable routine technique with air-mass analysis by experimentation, research, and training selected personnel at its central office. This very necessary and commendable improvement comes slower than might be hoped, partly for lack of funds and the rigidity of certain governmental regulations, but also because of the conservatism which must surround any complex routine when radical changes are being contemplated. The rate of development of the new methods in this country is being determined largely by the facilities for training of personnel and

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for research; these are as yet limited within the Weather Bureau, though they may be much expanded in the not too distant future depending on various contingencies.

On the other hand, outside the Bureau there are as yet only three higher institutions providing well organized instruction and promoting research in air-mass analysis and professional meteorology—Massachusetts Institute of Technology, California Institute of Technology and University of Toronto—the Massachusetts Institute of Technology still pioneering the field preëminently. The demand for trained meteorologists apparently continues greater than the supply, owing to the expansion of aviation, of the Weather Bureau, and various other governmental agencies. The need for an authoritative introductory but technical treatise in English on practical meteorology along modern lines is acute and probably materially holds back the diffusion of the knowledge that would lead both to more fruitful research and to better practical services to the public. In the limited sphere of air-mass analysis the need was to a considerable extent met by Namias' *An Introduction to the Study of Air Mass Analysis*, published by the American Meteorological Society and issued in two new editions in 1936 and continuing still as popular and as much in demand as in 1935.

Dr. Sverre Pettersen of the Norwegian Weather Bureau office in Bergen visited this country in the winter of 1935-36, lecturing and demonstrating to meteorologists in the Weather Bureau and other institutions his kinematical mathematical methods of calculating the displacements and movements of pressure formations on the weather map; while these ingenious semi-quantitative but empirical methods developed much interest and are being seriously tried here, it remains to be seen what rôle they will play in actually improving forecasts.

Research or experimentation in air-mass and frontal analysis is being carried on at the Massachusetts Institute of Technology, and also to

some extent in the Weather Bureau and by scattered individuals, but in the aggregate, of course, not nearly as much is being done as every meteorologist knows should be done, could the support for it be found. An investigation being made by H. Wexler for the Weather Bureau is worthy of note; under a special grant from the Bankhead-Jones fund he is studying the structure of the polar continental air as it builds up in the polar regions and then moves southward causing the cold waves which periodically afflict our latitudes, a fundamental problem. To provide the necessary data an airplane-meteorograph station was opened at Fairbanks, Alaska, and the Canadian Meteorological Service set up another at Fort Smith, N. W. Territory. The problem is being ingeniously approached from both theoretical and observational angles and the results will add greatly to our understanding of cold waves and their forecasting.

UPPER-AIR OBSERVATIONS

Progress.—It is axiomatic that air-mass analysis cannot be extensively nor effectively applied without a considerable number of well distributed upper-air observations. When the President's Science Advisory Board recommended in 1933 the adoption of the new methods, the Bureau soon extended its airplane-meteorograph network to over 20 stations. The high cost prohibited more. Though it was plain that still further observations would be needed, this beginning made it possible to get the general introduction of air-mass analysis well under way.

Problems.—Those who have been interested in the frontal and air-mass ideas both as a theoretical approach and as a rational analysis of the weather map to facilitate the forecast, have stated all along that the difficulties and uncertainties experienced in applying these concepts to actual day-by-day conditions would presumably be resolved should enough upper-air data become available to give a more nearly complete three-dimensional picture of the at-

mosphere. However, as more and more daily upper-air observations have been provided and studied, the long sought for simplification and understanding of the weather processes merely retreated into the future, for the added details to the picture only raised more problems than they solved.

Need for More Stations.—And still the call is for many more upper-air stations with more frequent and better observations from them than we have now; these will be required in order to study the many important rapid and small scale processes that apparently elude us now. Not only the development of air-mass analysis but also the discovery of other possibly more powerful working hypotheses for analyzing the weather map will depend in large measure upon such increased aërological observations. That this is the proper direction for improving forecasting, both theoretical and practical meteorologists agree, though the latter are apt to place more importance on the experience of the forecaster and the former somewhat more emphasis on the technical and rational equipment and adequacy of the working hypotheses. However, we have not yet discovered how to make the fullest use of the upper-air data we have, because not enough time is given the forecaster to analyze it nor is sufficient research provided for. At the same time it is clear that the present data, even if used to the limit, are inadequate to unravel the complexities.

Radio-Meteorograph.—In order to meet this urgent need for more upper-air observations, it is first necessary to reduce the unit costs of obtaining them and at the same time improve their accuracy. Owing to the expense of the airplane-meteorograph ascents and the inability of the plane to fly in bad weather when the observations may be needed most, efforts were begun in 1935 at the Blue Hill Observatory of Harvard University to develop a practical and accurate radio-meteorograph of low cost and light weight. In 1936, the previous radio-meteorograph experi-

ments in Europe and at Blue Hill having proved encouraging, at least four institutions have been developing radio-meteorograph systems: Blue Hill (Harvard), U. S. Weather Bureau—National Bureau of Standards, National Bureau of Standards—J. P. Fries Sons Co., and California Institute of Technology; perhaps there are others. Over 100 more or less successful experimental ascents have been made so far in this country, and at the Atlantic City meeting of the American Meteorological Society in December the first three of the above institutions reported their progress to a keenly interested audience and press, Harvard and the Government also giving actual demonstration ascents. The records from radio-meteorograph ascents check well with simultaneous airplane-meteorograph records. The instrument can now be built and sent up for but little more cost than an airplane ascent. Harvard radio-meteorograph records have been obtained in foggy, rainy weather and the recording, reduction and transmission (to the Weather Bureau offices) of the results made in less time than for a comparable airplane-meteorograph ascent.

New Type Balloon.—It is hoped, once a standard instrument is adopted, that by manufacturing in fairly large numbers the cost can be materially reduced. An important factor in bringing down the cost of an ascent to its present low figure has been the development by the Dewey and Almy Chemical Co. (Cambridge, Mass.) of a light, durable, latex-rubber balloon, capable of great expansion, high ceiling, great lift and rapid ascensional rate, and produceable at low cost. This was accomplished during 1935 and 1936, and by making possible great savings in initial cost of balloons, in amount of hydrogen necessary, and time for the ascent, did much to hasten and encourage the development of the radio-meteorographs themselves. Indeed, the progress made with radio-meteorographs during the last year has exceeded most anticipations and stands out as one of the major ac-

complishments of the meteorological year. Perhaps we can look forward to the establishment in the not too distant future of 100 radio-meteorograph stations making 1-4 ascents daily over the U. S., a scheme two years ago generally regarded as utopian.

WEATHER CYCLES AND LONG RANGE FORECASTING

Scientific Emphasis.—It is hardly necessary to state that this intriguing field is ever cultivated by a host of workers proceeding by various means, scientific and otherwise. Probably the most significant development at this time is the increased attention given the subject by critical but unbiased authorities in an effort to separate by truly scientific or rigorous considerations the many theories and methods proposed that have the most rational basis and hold the best promise of practical results. On the one hand the more thorough-going statisticians are pointing out the invalidating assumptions behind so much of the work that has been put forward, even some that has had wide acceptance in certain circles.

On the more constructive side, Bartels, Stumpff, McNish and others have recently indicated certain very useful mathematical criteria for testing the reality of periodicities computed by the usual methods; and D. Alter has developed an extremely rapid method of periodogram analysis which removes many of the barriers of tedium and time to this type of research.

Changes in the Solar Constant Values.—Dr. C. G. Abbot announced a relation between day-to-day changes in the solar constant values determined at Smithsonian observatories in the Southern and Northern Hemispheres, which would make them out to be real variations of the sun's heat and not due to terrestrial atmospheric effects; and that he found departures of solar radiation to be followed for some days or weeks by characteristic and considerable departures in temperatures at individual stations. These results have been questioned and do not appear to

have wide acceptance as yet, though such may be possible later when more solar-constant observatories are in operation and the corrections for elimination of the atmospheric effects can be further refined. Unfortunately, Dr. Abbot was unable this year to obtain the financial support he sought for these needed extensions of the work.

World Weather Coefficients.—The Weather Bureau with the aid of PWA funds has been making a statistical search for world-weather correlation coefficients for the United States of the type so successfully used in long-range forecasting in India by Sir Gilbert Walker and his colleagues. So far no final results have been announced, but the blanket routine manner in which the significant coefficients were sought would not seem to be propitious. In Walker's work there was always in mind some rational conception of the world circulation-mechanism of the atmosphere to guide the research.

Study of Long-Range Forecasting.—The Bureau of Agricultural Economics of the Department of Agriculture, under a grant from the Bankhead-Jones funds, began in 1936 the first part of the two-year study of long-range forecasting announced in 1935. The work is being done by trained men under supervision of C. F. Sarle, Department of Agriculture, C. G. Rossby, Massachusetts Institute of Technology, and C. F. Brooks, Harvard, and includes a critical survey of proposed methods of long-range forecasting to find those with the most scientific foundation and greatest promise in practical service of agriculture, particularly crop-yield forecasting. Some such fresh and critical appraisal has long been needed here; later it is planned to enter original research with the most promising methods found.

In the autumn of 1936, Dr. H. Arctowski of the University of Lwów, Poland, visited this country and lectured on his life study of climatic variations. As much as one may disagree with his methods and interesting ideas, one can heartily agree with him that the most fruitful

and early results towards the understanding and ultimate forecasting of long-period weather or climatic changes will come through the study of daily weather maps for the entire globe, unobtainable as yet owing to the lack of observations from the large ocean areas. At present daily weather maps for the northern hemisphere are being made and studied at Massachusetts Institute of Technology by Willett in connection with the long-range forecasting program of the Bureau of Agricultural Economics (*supra*).

WORK OF THE WEATHER BUREAU

Scope.—Probably over 75% of all the meteorological and climatological activity in this country falls under the manifold services of the Weather Bureau. The character of the Bureau's efforts has a predominating influence on the development of the whole field, all progress initiated or adopted by the Bureau almost immediately touching the affairs of the public as a whole and reaching the majority of professional men in the field likewise. The work of the Bureau in air-mass analysis, radio-meteorography, and long-range forecast studies has already been mentioned. Many other marks of accomplishment and improvement are worth mentioning for their general interest or intrinsic significance. Most of these were made against the handicap of inadequate funds, restricted legal powers, traditions, etc.

Flood Forecasting.—Great improvements in rationalizing and professionalizing the flood-forecasting service, under direction of Montrose W. Hayes, whose untimely death in November left the program unfinished and was an irreparable loss to the Bureau and the public it served. R. T. Zoch, of the Bureau, continued his important theoretical studies of rainfall in relation to runoff (*Monthly Weather Rev.*, April, 1936). The Bureau is now beginning to employ trained hydrologic engineers to devote their time to flood-forecasting and river work, the need of which was tragically emphasized

by the disastrous floods of the spring of 1936. Special continuous recorders for river stages are being developed and installed with the cooperation of the U. S. Geological Survey and the aid of WPA funds.

Observational Cooperation.—The extension of coöperation with other Bureaus of the government in exchanging forecasts for observations, in accordance with the recommendations of the President's Science Advisory Board in 1933, especially with the Army, Navy, Department of Agriculture, Bureau of Air Commerce, Bureau of Lighthouses, Coast Guard, National Bureau of Standards, which mutually improves the services, saves the public several hundred thousand dollars a year and eliminates duplication. There is also much coöperation with non-governmental agencies—4,500 voluntary cooperative climatological observers, 1,300 ships taking observations, upper-air data from aviation companies, broadcast of forecasts by 350 radio stations.

International Cooperation.—Extension of international coöperation in exchanging needed observations (by radio, cable, and phone) with foreign countries and ships at sea, accomplished largely as the result of the cumulative work of the International Meteorological Organization since 1872. At present arrangements are being executed for cooperation through our Navy to receive more daily reports from ships in the Pacific Ocean and from East Asiatic countries, which will be a great boon to our forecasters in the West. The U. S. Senate and the President last July ratified the International Convention for the Promotion of Safety at Sea, London, 1929—important because it makes the U. S. and other signatories bound to have their ships radio their weather observations to the government during tropical storms, encourages the collection of meteorological observations by ships at sea, and for the exchange by radio of daily weather reports between different countries in order to facilitate making their weather maps more complete.

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Bureau Studies.—The Marine Division of the Weather Bureau obtained a new chief this year, I. R. Tannehill, and added to its staff a well trained oceanographer-meteorologist to further its research work. Tannehill published (*Monthly Weather Rev.*, July, 1936) an original study on the practical use of swell reports in forecasting tropical storms in the Caribbean-Gulf region (based on the ideas of Dr. I. M. Cline), a matter of material value to ships in the hurricane region. The new hurricane-warning service instituted in 1935 proved very effective in 1936. The Division also completed a study of refraction at sea, important to mariners; continued its work with surface temperatures of the Florida-Gulf Stream in relation to weather in the Southeast, though without significant results; cooperated with the Hydrographic Office in revising some of the "Sailing Directions for . . ." handbooks; and directed a WPA project to compile and summarize several million more weather reports from ships, in extension of similar work begun several years ago under the CWA.

Airway Stations.—The airways meteorological service was expanded by adding many new reporting stations, especially along and off airways in the West where the network has been sparse; a new ceiling-light projector was experimented with; a device called an "anathermoscope" was developed for readily and cheaply ascertaining from the ground (airport) the presence of change of an inversion in the vertical lapse of temperature aloft above a low foggy or cloudy layer, for use particularly in the Valley of California where fog under inversions is persistent in winter. The six-hourly reporting and four-weather-maps-and-forecasts-a-day system of the airways begun in 1935, proved to be a very efficient improvement. A study of winds in the upper troposphere and sub-stratosphere, where the airlines seek to fly more and more, was published (*Air Commerce Bull.*, Nov. 15, 1936).

Observatory Developments.—The operation of the Mt. Washing-

ton Observatory (N. H.) (6,284 ft.) was continued in 1936 in cooperation with the Blue Hill Observatory of Harvard University; a new building is being built by friends of the Observatory to insure its perpetuation. The Bureau opened a 2nd-order airways station on Mt. Mitchell, N. C., (6,684 ft.) in December to supplement its upper-air reports. The new laboratory of the University of Denver was opened on Mt. Evans, Col., (over 14,000 ft.) last summer, and among other things will probably take meteorological observations.

The fire-weather service, in cooperation with the various forestry agencies, has been expanded and improved, particularly in the West. In California a first-order station and mobile truck units for making forecasts were established this year. Both the Bureau and the Forest Experiment Stations are doing considerable research in fire-weather problems, the United States being a leader in this field.

SIGNIFICANT RESEARCHES PUBLISHED IN 1936

- H. Wexler: The Cooling in the Lower Atmosphere and the Structure of Polar Continent Air, *Mon. Weather Rev.*, April, 1936.
- R. DeC. Ward, C. F. Brooks, A. J. Connor: The Climates of North America, Part J, Vol. II, of the monumental *Handbuch der Klimatologie* edited in Germany by W. Koppen and R. Geiger.
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AMERICAN EXPLORATION

BY ROBERT M. BROWN

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ELLSWORTH-WILKINS POLAR EXPEDITION

When THE AMERICAN YEAR BOOK, 1935, went to press no word had been received from Lincoln Ellsworth who with his pilot, Herbert Hallock-Kenyon, had left Dundee Island, Graham Land, on Nov. 23, 1935 for a flight across the Antarctic Continent to Ross Sea. In his flight across the Antarctic Continent and after the radio failed because of a defective switch, Ellsworth and his companion made their first landing at longitude 104° W, 750 miles from the Pole and 1,550 miles from Dundee Island, to take observations. After 19 hours, they took off again but because of low visibility made their second and third stops after short flights. At the third camp a blizzard kept them in camp for eight days, (long. 125°W) and the place, *The Polar Star*, was almost buried in snow. After one more landing in longitude 123°W on

Dec. 4, to fix position, the last flight took them to 153°W longitude where a landing was made because of the depletion of the gas supply. From this point Ellsworth and Kenyon walked 15 miles to Little America and reached their destination Dec. 15, 1935, 22 days after leaving Dundee Island. They were found on Jan. 15, 1936 by the airplane of the Royal Research Society's ship *Discovery II*.

The *Wyatt Earp*, the ship which was to pick up Ellsworth, with Sir Hubert Wilkins left Dundee Island Nov. 27, 1935 and arrived at the Bay of Whales Jan. 20, 1936.

After leaving Graham Land, Ellsworth crossed a mountain range (Eternity Range) which has the same trend as the Graham Land axis, and until the first landing point, 6,400 feet high, scattered peaks and ranges were discovered, which leads easily to the hypothesis that the entire group is an extension of the Andes.

The trend of the Queen Maud Range near Ross Sea admits a possibility that the mountains extend completely across Antarctica and if this assumption is proved, the supposed sea level connection between Weddell Sea and Ross Sea does not exist. This conclusion was reached also by Byrd during his last expedition.

NORTH AMERICA

Anticosti Island.—An expedition of the American Museum of Natural History, conducted by William M. Newsom, accompanied by Earl F. Watson, vice-president of the American Surety Company, sailed from New York Sept. 6, 1936 for Anticosti Island in the Gulf of St. Lawrence to study the deer on the island and to make a collection of the large and small mammals to be found there. They expected to complete the work by October 15.

Bering Sea.—H. B. Collins, Jr., was the leader of the National Geographic Society—Smithsonian Institution Archeological Expedition to Bering Sea. The party excavated mounds near Cape Prince of Wales, uncovering Eskimo armor, weapons, and tools approximately 1,000 years old. The expedition discovered the first site of the old Eskimo "Thule Culture" ever found in Alaska, and confirmed the fact that this culture spread eastward from Alaska. Evidence was also found that the Thule Culture was derived from a still earlier one known as the "Birnikr Culture."

Mt. McKinley.—The National Geographic Society's Mt. McKinley Expedition, under the leadership of Bradford Washburn, successfully photographed Mt. McKinley and its related peaks. The photographs prove conclusively the location of Mt. Hunter, a peak more than 15,000 feet high, about which accurate information has been so scarce that its very existence has been denied.

Kenai.—Dr. H. E. Anthony accompanied James A. Stillman and J. H. Durrell on an expedition to Alaska, Aug. 12 to Oct. 12, as representative of the American Museum of Natural History to collect mammals and

make observations for group possibilities for the new hall of North American mammals. The party hunted on the Kenai Peninsula and for a brief period on the north shore of Cooks Inlet. Dr. Anthony secured among other specimens, three Alaska moose, two Dalls sheep and two black bear in addition to a very large Alaska moose head presented by Mr. and Mrs. James Stillman, Jr. and a head of Dalls sheep second only to the world's record. A number of photographs were taken and those depicting the character of the moose range on the Kenai Peninsula will be of great service in the composition of the Alaska Moose group for the new hall.

Nova Scotia.—Through the generosity of Michael Lerner, an expedition left the American Museum of Natural History in July and proceeded to the swordfishing grounds off Cape Breton, Nova Scotia. The personnel consisted of Mr. Lerner, John T. Nichols, curator of Recent Fishes, Francesca La Monte, associate curator of Ichthyology, Harry C. Raven, associate curator of Comparative Anatomy, Miles Conrad, assistant curator of Comparative Anatomy, Anthony Keasbey of the Department of Ichthyology and Ludwig Ferraglio of the Department of Preparation. Data were collected for exhibit material in the Museum. A laboratory has been established at Louisburg for studies of the anatomy, food habits and other data on the fishes of the region.

CENTRAL AMERICA

Dr. A. C. Kinsey of Indiana University led a scientific expedition into Mexico and Central America under the joint auspices of the National Research Councils and Indiana University. Dr. Kinsey went in search of new species among living organisms, particularly the gall wasp. Life histories of the gall wasp seem to prove that heredity exerts greater influence than environment in the evolution of species. Dr. Kinsey's findings thus far as to the evolutionary chain of developing species are not in accord with Darwin's theory

of gradual variation of species but rather in accord with the theory of mutation. He maintains that there is a sudden change in species.

Dr. Frank E. Lutz, Curator of Entomology, American Museum of Natural History, spent February and March with Dr. W. J. Gertsch and William C. Wood in very successful field work on butterflies and moths of Panama. Two regions were selected for collecting—Barro Colorado island and the western slopes of the volcano of Chiriqui near the Costa Rican border at an altitude of about 4,200 feet. Barro Colorado island is covered by a dense jungle typical of low hills near sea level. The fauna of the two regions differ widely and the expedition secured a collection which, it is hoped, will help in a better understanding of the geographic distribution of insects in Central America.

WEST INDIES

The Twenty-second Expedition of the Department of Tropical Research of the New York Zoological Society under William Beebe was a tour of the West Indies. The plan of the expedition was to make as thorough as possible a study of the black and the yellow-finned tunas which are taken between Martinique and St. Lucia; to see and report on the birds of paradise introduced on Little Tobago from New Guinea many years ago, and to begin an investigation of the boundary between the fish fauna of the West Indian region and that of South America. The expedition was gone from Jan. 22 to March 13, 1936.

SOUTH AMERICA

Ecuador.—The Associated Press reported that an expedition sent early in 1936 by the Heye Museum of the American Indian to seek ethnological data on the Ssabela was attempting to cut a way through trackless jungles of the Oriente, past hostile Ssabela Indian tribes towards the Andean lake where the Incas were reputed to have hidden their gold from Spanish invaders. Captain E. Erskine Loch headed the party and

with him were two white men and a number of Indians. Three members of the expedition returned stricken with jungle fever. Captain Loch reports that the Indians have not been able to establish friendly relations with the Ssabelas as yet.

Brazil.—The Harvard Museum of Comparative Zoology sent an expedition early in the year to southern Brazil to test the theory held by some geologists that the South American and African continents were at one time joined together as a part of prehistoric Gondwana land, which stretched halfway around the Southern Hemisphere. Discovery of strikingly similar rock formations and fossils on both continents has given the theory considerable support. The region to be visited is the province of Rio Grande Do Sul, in southern Brazil, where for more than 100 miles along the Jucuhy river, on the border between the jungle and the pampas, there are rich red sandstone beds of the Triassic age approximately 175,000,000 years ago. Extremely rich in reptile fossils, especially those related to the Gondwana hypothesis, this region is practically untouched by scientists. If the fossils from this area resemble those already unearthed in Africa, it will be a strong factor in support of the linkage theory. The few specimens previously taken from these beds indicate that the Triassic reptiles were about nine feet long and about four feet in height. Despite their heavy tails, they were good runners and were advanced reptiles, approaching the mammal stage. The Brazilian government is cooperating in the research, which is expected to last for about a year.

British Guiana.—Gloria Hollister with Ruth W. Brooks, artist, and Arthur B. Menken, photographer, returned in May from the twenty-third Expedition of the New York Zoological Society's Department of Tropical Research. They journeyed to Kaieteur Falls and with the aid of Arthur Williams, pilot and owner of a plane, they photographed a section of the area containing many uncharted gorges and falls. Throughout the

AMERICAN EXPLORATION

trip collections were made which included 33 live birds, eight mammals and 15 amphibians and reptiles as well as preserved specimens.

Dutch Guiana.—Dr. Morton C. Kahn brought back to the American Museum of Natural History fine woodwork in the form of paddles, combs and food stirrers from the Upper Aucaner Bush Negroes of Dutch Guiana. From the Alukuyana Indians, Dr. Kahn obtained a bow and arrows and two jaguar bone flutes.

ASIA

Indo-China.—The Fleischman-Clark Indo China Expedition left San Francisco, Feb. 21, 1936 on the *President Coolidge* to make an extended collecting trip, starting for the jungle from Saigon. The members of the expedition were Major Max C. Fleischman of Santa Barbara and Dr. James L. Clark, director of Preparation of the American Museum of Natural History. The object of the expedition was to obtain as many varied specimens as possible from the interior of Indo-China for scientific study. Wild life there is on the wane, and it was considered important that the mammal collections of the Museum be supplied with as many forms of fauna as could be obtained. In addition the expedition made motion and still pictures for the Museum's educational work. Specimens of the banting were collected, also wild water buffalo, the Saladange, hog deer and mouse deer, together with many specimens of reptiles and fishes.

New Guinea.—In 1936, the New Guinea Expedition, organized and led by Richard Archbold, made valuable collections of natural history specimens in South New Guinea in the upper reaches of the Fly River and the mountains beyond. Portable radios and a new Fairchild amphibian formed a part of the equipment. It is planned to collect mammals and birds for the American Museum of Natural History and plants for the New York Botanical Society. Collections will also be made of cold-blooded vertebrates and insects. Porpoises and sea turtles will form another branch of collecting. The

members of the party, in addition to Mr. Archbold, are Dr. A. L. Rand, assistant leader and ornithologist, J. L. Brass, botanist; G. H. H. Tate, mammalogist. Russell R. Rogers is co-pilot with Mr. Archbold and Ewing C. Julstedt, radio operator. It has been found that the plane is an enormous aid in transporting supplies over the more difficult terrain. The base camp was established on Daru Island near the mouth of the Fly River. From here a number of reconnaissance flights were made, and a new camp was made over 100 miles inland at a 10,000-foot elevation on the Dap range of mountains.

MRS. AKELEY IN AFRICA

Dr. Mary L. Jobe Akeley, widow of Carl Akeley, African explorer, returned in April from a seven-months' expedition where she made a comprehensive survey of the wild life of the great African game preserves of the Kruger National Park, Transvaal, in northern Zululand, Natal, and in Portuguese East Africa, for the Akeley African Hall of the American Museum. Mrs. Akeley spent two months studying the Swazi peoples, who are still among the most primitive of the Bantu in South Africa. She studied their customs and manners, besides securing some of their beautiful wood carving. She brought back for Akeley Hall a complete miniature of a Swazi village made by two skillful native chiefs who worked steadily on it for nine weeks. Mrs. Akeley also secured some excellent motion pictures of the rarest animals in this part of Africa, among them being the greater Koodoo, Sable antelope, stembok, oribi and blesbok, as well as of lions. It was found that the animals in the game reserves had quadrupled in numbers in a period of from twenty to twenty-five years.

TEMPLETON-CROCKER PACIFIC EXPEDITION

The Templeton-Crocker expedition of the Department of Tropical Research of the New York Zoological Society returned during early sum-

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mer. It was carried on under the directorship of Dr. William Beebe who, together with three members of his staff, John TeeVan, Jocelyn Crane and George Swanson, was invited by Templeton Crocker as a guest on his yacht *Zaca*. Two months were spent in the Pacific with prolonged stops at Cape San Lucas, Inez Bay in the Gulf of California and Clarion Island. Special objects of research were tunas, whale sharks, intensive dredging on the Punta Arena and Gorda Banks and as types of isolated oceanic islands, comparison of Clarion with Bermuda.

OCEANOGRAPHY

BY H. A. MARMER

UNITED STATES COAST AND GEODETIC SURVEY

ATLANTIC OCEAN

Ice Observation and Patrol Service.—The duty of patrolling the area of the North Atlantic steamship routes between Europe and North America which is menaced by icebergs falls to the U. S. Coast Guard by international agreement. The ice season generally lasts from March to July. To carry out the duty of ice patrol effectively, oceanographic observations are necessary in order to forecast the number of icebergs that are likely to come down and also to forecast their movements. The ice season of 1936 was unusually light, rendering the ice patrol work merely nominal. But the ice observation service was carried out as usual, and in connection with this work six sea-surface isothermal charts of the region of the Grand Banks of Newfoundland were prepared from data collected on as many cruises of two Coast Guard cutters. During the months of April, May, and June, another Coast Guard cutter made dynamic topographic charts of the Grand Banks region, occupied 30 oceanographic stations around Greenland, and studied the retreat and advance of the glacier front in Arsuk Fiord.

Tide Observations and Hydrographic Surveys.—Along the coast from Maine to Florida, 20 primary tide stations were maintained in operation by the Coast and Geodetic Survey for the purpose of hydrographic control, tidal research, and the determination of changes in sea level. Comprehensive surveys of the

continental shelf were extended to include the approaches to New York Harbor during which the Hudson River submarine valley was thoroughly developed. This revealed an intricate submarine topography beyond the 100-fathom depth curve. The Hydrographic Office of the U. S. Navy carried out a hydrographic survey of the Caribbean coast of Central America from Colon, Panama to Port Simon, Costa Rica and in addition occupied about three score dynamic oceanographic stations. And in cooperation with a Colombian commission of engineers, the Hydrographic Office conducted a survey of the north coast of Colombia.

The Woods Hole Oceanographic Institution continued oceanographic studies in the Gulf of Maine and the slope water area eastward of Georges Bank. On three occasions a close network of stations was made in the important area lying between the edge of the continental shelf and the Gulf Stream. Considerable time was also devoted to further study of the geology of the canyons along the southeastern edge of Georges Bank, numerous bottom samples being obtained both by dredging and by using the new Piggot explosive sounding tube.

PACIFIC OCEAN

Hydrographic Surveys.—Vessels of the U. S. Coast and Geodetic Survey continued surveys off the coast of California, using radio acoustic ranging for position determination of offshore soundings. Extensive areas

along the coast near Cape Mendocino were wire dragged to make sure no dangerous pinnacle rocks existed in the vicinity of important steamship lanes. A number of submarine valleys were developed in the course of this survey. Several vessels continued surveys westward from Unimak Pass in the Aleutian Islands. Accurate hydrographic charts of this region are important since this route is advantageous to westbound ships from Seattle and neighboring ports to the Orient but has not been used in the past because of the lack of surveys.

Tide Observations.—Nine primary tide stations were maintained in continuous operation by the Coast and Geodetic Survey from California to Alaska, and one in the Hawaiian Islands. Besides furnishing the necessary data for hydrographic surveys, the results of these observations are of basic importance in tidal research and in the determination of relative changes in elevation of land and sea.

The Scripps Institution of Oceanography centered its activities mainly in the study of typical water masses in various regions and their movements, and in the interrelation between atmosphere and sea. On Sept. 1, Dr. T. Wayland Vaughan retired as director and was succeeded by Dr. H. U. Sverdrup of the Chr. Michelsen Institute, Bergen, Norway.

The Oceanographic Laboratories of the University of Washington carried on researches in various phases of physical and chemical oceanography, dealing with the distribution of boron in the sea, the penetration of light into sea water including design and

construction of a new submarine photometer, and a survey of the radium content of ocean bottom samples in the North Pacific.

GULF OF MEXICO

Four primary tide stations were kept in continuous operation by the Coast and Geodetic Survey for furnishing hydrographic control and data for tidal research and for determination of changes in relative elevation of land and sea. One Coast Survey vessel continued the comprehensive survey of the continental shelf, an important development being the use of the first time of sono radio buoys. These buoys are automatic and carry complete audio and radio units to convert the underwater sounds of bombs used by the surveying ship into radio signals.

AMERICAN GEOPHYSICAL UNION MEETING

The annual meeting of the Section of Oceanography of the American Geophysical Union was held at Washington on April 30, 1935. The papers presented a review of the activities in the past year of the various Federal and educational institutions engaged in oceanographic work. In addition, there were several papers of a general nature dealing with the influence of the Mediterranean outflow in the Sargasso Sea, exploration of California submarine canyons and the transport of surface water due to the wind system over the North Atlantic. These papers appear in full in Part I (pages 193-232) of the *Transactions of the American Geophysical Union*, published by the National Research Council in July, 1936.

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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. OF PETROLEUM GEOLOGISTS, Box 1852, Tulsa, Okla.	PHERS, University of Pennsylvania, Philadelphia, Pa.
AMERICAN GEOGRAPHICAL SOCIETY, Broadway at 156th St., New York City.	EXPLORERS CLUB, 10 W. 72nd Street, New York City.
AMERICAN METEOROLOGICAL SOCIETY, Blue Hill Observatory, Milton, Mass.	GEOLOGICAL SOCIETY OF AMERICA, 419 W. 117th Street, New York City.
APPALACHIAN MOUNTAIN CLUB, 5 Joy St., Boston, Mass.	NATIONAL GEOGRAPHIC SOCIETY, Washington, D. C.
ASSOCIATION OF AMERICAN GEOGRA-	SEISMOLOGICAL SOCIETY OF AMERICA, University of California, Berkeley, Calif.

DIVISION XXI

CHEMISTRY AND PHYSICS

PHYSICS AND PHYSICAL CHEMISTRY

By THOMAS H. OSGOOD

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GENERAL

In the field of nuclear physics, which is the most interesting to academic physicists at the present time, the main advances during 1936 have been in the detailed investigation and interpretation of phenomena concerning which approximate information was already available. Neutrons are under better control; the forces between simple nuclei are more fully understood; and the masses of light atoms are known to about one part in 50,000. In other branches of physics progress has followed somewhat routine lines. The Compton theory of scattering of x-rays and gamma rays has had a thorough overhauling, and has been subjected to searching experimental tests, from which it has emerged unchanged. New data are available concerning cosmic rays, and particular attention has been paid to the secondary processes which contribute to the total ionization they produce. Confidence in the new higher value of the charge of the electron has increased. The year has been marked by no serious upsets and by no startling discoveries, although any one of a number of papers published during the last few months would have taken the scientific world by storm had it appeared two years ago.

NUCLEAR CHEMISTRY

The inorganic chemist is concerned with the possible intercombinations between some 92 atoms, each combination including only a few of any

one species; and if we make an exception of the light elements—hydrogen, carbon, and oxygen—the same statement may be applied to organic chemists. On the other hand, the nuclear chemist, about whose work volumes have already been written, is at present concerned with the combinations which can arise by bombarding one of some 300 known isotopes with one of the more elementary particles, protons, neutrons, deuterons, alpha particles, electrons. Often the product he makes is unstable, breaking up sooner or later into two or more simpler particles. By identifying these and measuring their energies the nuclear expert can infer some of the properties of the nucleus which was originally bombarded.

Probably neutrons are the most frequently used projectiles in atomic disintegration, partly because they can be obtained readily without elaborate equipment provided radon and beryllium are available, and partly because their lack of charge confers on them a peculiar ability to enter other nuclei. To make the results of such experiments easy to interpret, it is necessary to control the neutrons' velocities. Fermi and his colleagues (E. Amaldi and E. Fermi, *Ricerca Scientifica* 1, 223.) have analysed the neutrons emitted from a Radon-Beryllium source after slowing down through paraffin. They classify them into several groups which are labelled A, B, C, D, I, depending on their velocities which in

turn determine the reactions they can initiate. Interest has centred mainly on those of the C group which move slowly with thermal velocities (E. Amaldi and E. Fermi, *Phys. Rev.* 50, 899). Such neutrons are obtained by surrounding the source with a thick layer of hydrogen-containing material, usually water or paraffin, in which fast neutrons are slowed down to thermal velocities by successive elastic impacts with hydrogen nuclei. Some of the neutrons thus slowed down combine with the protons to form deuterium. When other elements are exposed to the action of these slow neutrons the capture cross section is often an irregular function of the energy of the slow neutrons, with sharp maxima representing some sort of absorption bands. That the C neutrons have very low energies has been proved by Moon and Tillman, who found that the activity produced by them is changed by maintaining the hydrogen-containing absorbers at different temperatures. A more direct proof is provided by the experiments carried out with a mechanical velocity selector in the laboratories of Columbia University in which the C neutrons were found to possess the expected thermal velocities, with a Maxwellian distribution. The energies of the various slow neutron groups in electron volts are, according to Fermi: C, 0.037; D, 1.6; A, 4; B, 7; I, 36. Considering this array as a "band" spectrum of the energies of the slow neutrons, the width of the bands has been determined. In the narrowest case (A neutrons) it is 4 per cent of the energy of the band. Though the others are wider, they are still narrow enough to ensure that practically every elastic collision with an opposing nucleus will degrade the neutron into a lower energy group, except in the case of those of thermal energy, which undergo perhaps 150 collisions in paraffin before being captured, remaining all the time within group C.

The nuclear cross section for capture of slow neutrons is usually assumed to be inversely proportional to the velocity of the neutron, which is another way of saying that the

longer a neutron takes to pass by another nucleus, the more chance it has of being captured. This is not true, however, of all slow neutrons, for it has been shown that their apparent absorption depends on the type of nuclear reaction used to detect them. Ingenious experiments in which slow neutrons were further slowed down or speeded up by passing obliquely through a rapidly rotating disk, showed that the inverse-velocity law holds for silver but not for cadmium. (Rasetti and others, *Phys. Rev.* 49, 104).

One of the most important aims of experiments on artificial disintegration is the measurement of the energies of the products of disintegration, since these energies play an essential part in the determination of nuclear masses. The disintegration of boron has been investigated by Cockroft, Dee, and others in the Cavendish laboratory. Under deuteron bombardment Be^8 and Be^9 are among the products. Under proton bombardment boron gives rise to three helium nuclei, two of which usually carry away most of the available energy. It is reasonable to conclude that the process goes in two stages. An alpha particle is emitted, in accordance with the equation $\text{B}^{11} + \text{H}^1 \rightarrow \text{Be}^8 + \text{He}^4 + \text{Kinetic Energy}$. The resulting Be^8 nucleus is unstable, and disintegrates so quickly into two alpha particles, that the cloud-chamber photographs show three alpha particles apparently originating at the same point.

The study of disintegrations in which one of the products is a positive or negative electron has been difficult heretofore. Such electrons usually lose a considerable amount of their energy by absorption in the source and by other processes, so that their observed distribution-in-energy is not that which is characteristic of true beta-decay. Hence, the maximum energy of the electrons has been uncertain. Fermi's theory of beta-decay has been modified slightly by Konopinski and Uhlenbeck to take care of the difficulty, and during the last year several authors (Kurie, Richardson, and Paxton,

Phys. Rev. 49, 368, and others) have made use of it to find the disintegration energy in such processes as the change of radioactive fluorine to oxygen, each of mass 17. In all, about a dozen reactions have been studied, and the method leads to relative atomic masses which are in good agreement with those found by other methods.

NUCLEAR FORCES

In large-scale problems which deal with the forces between electric charges, Coulomb's law is of universal validity. This law states that the force between two electric charges concentrated at points is proportional to the product of the charges and to the inverse square of the distance between them. Rutherford's work more than a decade ago showed, however, that it was not valid in the close collisions between alpha particles and aluminum nuclei. As a starting point for a thorough-going theory of nuclear forces, it is necessary to know the nature of the forces between the simplest of particles, protons. Technique and apparatus have only recently been developed which provide this information (Tuve, Heydenburg and Hafstadt, *Phys. Rev.* 50, 806). Their experiments sought to answer two questions. (1) If a beam of moving protons falls on a uniformly distributed group of protons which are at rest, what is the angular distribution of the scattered particles? (2) How does this angular distribution vary as the velocity of the moving protons is changed? It should be noted that since the moving and the stationary particles are identical, it is impossible to distinguish between scattered and recoil particles. During the last few years Tuve and his associates have developed a proton beam of intensity about 0.01 microampere. This was passed through hydrogen kept at 12 cm. of mercury, a relatively low pressure. The scattered protons were counted by an ionization chamber which could be set at various angles, a check being kept meanwhile on the constancy of the primary beam by another fixed chamber which

counted the scattered particles always at the same angle. Briefly, the results of the experiment showed that Coulomb's law did not describe accurately the forces between protons whose centers approached within about 10^{-13} cm. of each other, and that the faster the bombarding protons moved, the worse was the agreement between observed and theoretical values. In general, the number of scattered protons was much greater than Mott's theory, based on Coulomb's law, predicted.

Breit, Condon and Present (*Phys. Rev.* 50, 825) interpret these experiments as proving that when two protons approach closer than about 10^{-13} cm., a short-range attractive force comes into play, so that the total repulsive force diminishes to a value less than that calculated by the inverse square law. Probably the most important point which arises from the analysis of the experiments (and from others dealing with neutrons) is that the short-range attractive forces in proton-proton interaction and in proton-neutron interaction are identical apart from contributions from the spins (magnetic effects) of the particles. This means that in forming a theory of more complex nuclei it can be assumed as a working hypothesis that the interactions between protons and neutrons, or protons and protons, or neutrons and neutrons, are equal.

NUCLEAR MASSES

It has been known for many years that the mass of a helium nucleus is less than the mass of four separate protons. This is but a special case of the general law that the mass of a nucleus, if it be stable, must be less than the sum of the masses of the component parts into which it can actually, or in imagination, be broken up. An accurate knowledge of mass defects is indispensable in nuclear theory. Masses are deducible from observations with a mass spectrograph, and also from measurements in nuclear transmutation; in the latter case the kinetic energy carried away by the products of disintegration is to be reckoned as mass in ac-

cordance with Einstein's equation. The results achieved by the two methods show remarkable agreement. An up-to-date table of the most reliable values of the masses of light atoms is available in a paper by Bonner and Brubaker (*Phys. Rev.* 50, 308). The masses quoted there differ in most cases by negligible amounts from those given earlier in the year by Mattauch, by Aston, and by Oliphant (*Nature*, 137, 396).

Oliphant's communication points out some new regularities in the masses of light elements. Light atoms, up to about atomic number 10, are slightly more massive than would be expected if the whole number rule were true. Using the best masses available, Oliphant has constructed a curve which shows that for light atoms the departures from the whole number rule are periodic in character. He^4 , Be^8 , C^{12} , O^{16} occupy the lowest positions on the rising and falling graph, indicating in general that their masses are appropriate to their stability. The intermediate elements and most of the isotopes lie on smooth curves between these minimum points. Radio-active isotopes such as Li^8 , C^{11} , B^{12} , N^{13} , F^{17} lie considerably above the curve and cannot be included in the main sequence of stable nuclei. The periodicity of four mass units which characterises the curve suggests at first glance that alpha particles are components of these nuclei, but closer examination, particularly in the case of Be^8 , shows that this cannot be true for the stable atoms.

A partial list of atomic masses recently given by Bainbridge and Jordan includes the following, all of which are derived from doublets measured on the Harvard mass spectrograph: Be^9 , 9.01517; B^{10} , 10.01633; B^{11} , 11.01295; C^{12} , 12.00402; Ne^{20} , 19.99917; Ne^{21} , 21.00013; Ne^{22} , 21.99870; A^{40} , 39.97580. The uncertainty in these numbers is about one part in 100,000. An increasing number of regularities is found, though not explained, in the isotopes of heavier elements. Dempster, for example, showed that Ba falls into line with the neighboring elements Ce,

Xe, Sn, Cd by having two weak components, separated by two mass units at the lower end of its series of isotopes.

COSMIC RAYS

The ionization produced by cosmic rays is caused by flying particles of several kinds. The most difficult problem here is to discover which are the primary rays coming to the earth from outer space and which are of secondary origin produced by the interaction of the primaries with terrestrial matter. A clear statement of the case has been given in a very readable article by A. H. Compton (*Rev. Sci. Inst.* 7, 71).

Cosmic ray ionization is not steady. There occur occasional bursts of ionization in which splashes of energy appear amounting to as much as 10^{11} electron volts. Cloud-chamber observations reveal that these events coincide with the liberation of veritable showers of ionizing particles, often originating at one point. Much of the work which has been done in the last year has been concerned with these showers. They are caused by primary rays striking heavy matter such as lead. Clay and his associates (*Physica* 3, 627) have investigated the variation in the frequency of the showers as the thickness of obstructing matter is increased, and conclude that two types of primary radiation are responsible, one being considerably more penetrating than the other. Stevenson and Street's cloud-chamber photographs show that about 75 per cent of point-originating showers are each produced by one electron, the remainder probably by photons which leave no telltale ionization along their paths. If these non-ionizing rays be true primary rays (though there is no guarantee of this), a recent contention of Millikan and his collaborators (*Phys. Rev.* 50, 579) that a considerable proportion of the primary rays consists of photons, receives independent support. The particles which make up the "drops" of the showers are positive or negative electrons of such

energies as to be absorbed by about 5 cm. of lead.

It appears now to be established that the source of the primary cosmic rays is beyond our local galaxy, provided that the rays are assumed to be created in matter and that the relevant properties of matter are the same throughout space. Otherwise it is difficult to account rationally for a small regular variation in intensity with sidereal time, on the phase of which most observers agree.

THE CHARGE OF THE ELECTRON

The value of the electronic charge e has undergone a slight adjustment beyond that reported in THE AMERICAN YEAR BOOK for 1935. Confidence has been increasing steadily in the figure deduced from x-ray experiments, which is about 0.6 per cent higher than that obtained by Millikan from his classical oil-drop experiment. A new determination of the viscosity of air has been made by Bond (*Nature*, 137, 1031) using a method entirely different from Kellstrom's. The two methods give practically identical values, and support the higher value of e . Bearden has repeated Millikan's experiment in toto, and his preliminary report also adds weight to the higher value of e .

DuMond and Bollman have made a series of exhaustive investigations to find out if there were not some unsuspected irregular behavior in the diffraction of x-rays by calcite which might vitiate the customary procedure of calculating e from crystal measurements. It has been suggested, for instance, that the surface layers of a crystal may not have the same grating space as the interior of the structure. However, they found that the angles for Bragg and Laue reflections agreed to within one part in 6,000, and concluded that x-ray methods for finding e are reliable. They quote $e = 4.799 + .007 \times 10^{-10}$ abs. e. s. u. which differs from the modern oil-drop value $4.800 + .005 \times 10^{-10}$ by much less than the estimated experimental error.

METALS

Three or four excellent summaries of experiments and theories concerning supraconductivity (e.g., Darrow, *Rev. Sci. Inst.* 7, 124) indicate that interest in it is increasing steadily. If a current be established in a metal such as a lead ring at a temperature a few degrees above absolute zero, the current will persist as though the electrical resistance of the specimen were immeasurably small. This state of supraconductivity can be interrupted in two ways, by increasing the temperature or by applying an external magnetic field of sufficient strength. There is a time lag of a few seconds in the former method before the normal state is restored (not due to slowness in the change of temperature), but no time lag in the latter. This means that the coupling, in the mathematical sense, between the external magnetic field and the supraconducting electrons, and between the atomic lattice and the other electrons, must be much tighter than between the lattice and the electrons which carry the persistent current. Many of the baffling phenomena which have been observed in the last few years when a conductor passes through the transition stage have been traced to surface currents. Experiments with thin films have thrown some light on the matter. There is apparently a lower limit of thickness about 3×10^{-5} cm., below which metallic films will not show supraconductivity. Meissner, Heidenreich, and Ochsenfeld (*Phys. Zeits.*, 37, 449) also conclude from their studies of thick specimens in the form of single crystals of tin that when supraconductivity sets in the current is confined to a thin layer at the surface of the metal, and that the lines of force are displaced completely as though the conductor had a permeability zero.

Smith and Wilhelm (*Proc. Roy. Soc. A* 157, 132) have been able to distinguish between the magnetic field due to the persistent current and the distorted external magnetic field. Thus the persistent current could be measured. It was found to have a definite saturation value. The the-

oretical treatment of the subject which has been given by Peierls (*Proc. Roy. Soc. A* 154, 613) indicates that the observations cannot be explained, as Mendelssohn suggested, by assuming that small regions of the specimen become supraconducting before the bulk of the material. Peierls postulates the existence between the normal and supraconducting conditions, of an intermediate state in which the permeability is between 0 and 1, is continuous, and is dependent on the external field.

It seems likely that in the near future experiments on supraconductivity will make significant contributions to the rapidly developing theory of metals, a summary of which has recently been published (Mott and Jones, *Properties of Metals and Alloys*, Oxford University Press, 1936). A hopeful theory of ferromagnetism is now beginning to take shape (Slater, *Phys. Rev.* 49, 537). Ferromagnetic properties are ultimately traceable to the spins of electrons; when the spins of several electrons are similarly directed, the atoms will have magnetic moments. However, the shells of electrons which contribute to the magnetization cannot be those which are responsible for the cohesion of the atoms in the metallic crystal, for it is known that a crystal will be stable only if the spins of the outer "cohering" atomic electrons are arranged to give no net magnetic moment. Hence the ferromagnetic electrons must belong to an inner shell. In general, there will be equal numbers of electrons in a crystal with their spins in each direction. If some of these spins were reversed, the total energy would be decreased due to the change in the interaction between the electrons. Hence a stable state of permanent magnetization might be anticipated in a great many crystals.

But there is a compensating effect. All the lowest energy levels are usually filled (two paired electrons in each), and those electrons whose spins undergo reversal must be lifted up to higher empty levels. Thus there is a gain in energy which may

or may not overbalance the decrease due to interaction effects. In the former event, the atoms are in their most stable state with paired electron spins; in the latter, they are stable when they possess a magnetic moment. This view of ferromagnetism demands that there be empty levels available for occupancy not far above the lowest states. Hence the inner shell of electrons which is responsible for ferromagnetism must be an incomplete shell, and the overlap of these inner shells with the corresponding shells of neighboring atoms must be small. All these conditions restrict the possible ferromagnetic elements to a very small number and explain why a single crystal of iron has a permanent magnetic moment.

MOLECULES

A series of nine papers (*Chem. Soc. J.*, July, Aug.) by Ingold and others attacks the problem of the structure of the benzene molecule, by an analysis of the infrared, Raman and electronic spectra. These spectra undergo modifications when the six hydrogen atoms in the normal benzene molecule are replaced by six atoms of deuterium. For example, the larger moment of inertia of hexadeuterobenzene causes less spreading of the rotational lines, and gives them narrower contours. The relationships between the fluorescent spectra of the two isotopic substances in the vapor state lead to the conclusion that both possess three electronic levels and two active vibrations. Transitions from the three excited electron states to the normal state of the molecule excite the same vibration frequencies, showing that the three excited electronic states and the ground state have the same symmetry properties. It is reasonable, therefore, to conclude that the three excited states themselves possess the same symmetry.

If the molecule has a centre of symmetry it is not to be expected that the same frequencies should be observed in both Raman and infrared spectra, although distorting forces peculiar to the liquid state may nul-

lify this argument by destroying a symmetry existing in a free molecule. Coincidences in frequencies actually are found, but in view of the possibility of deformations caused by cohesive forces, the authors decide that there is insufficient evidence to disprove the existence of a centre of symmetry. The choice of a model lies among three; the plane hexagonal model, the Kekulé model and the puckered model. After considering all the relevant data, Ingold and his associates find that the first of these fits the observations best, but remark that the question is not yet definitely settled.

The measurement of molecular dimensions by electron diffraction methods has been well summarized by Brockway (*Rev. Mod. Phys.* 8, 213). Since this article appeared many more substances have been investigated by different authors *e.g.* paraldehyde, acetaldehyde, ethylene oxide, the inter-nuclear distances being determinable with an accuracy of about two per cent.

PUBLICATIONS

The following publications during 1936 will be well used in the next few years. *Foundations of Physics*, R. B. Lindsay and H. Margenau (John Wiley & Sons); *Progress in Physics*, Vol. II, edited by Allan Ferguson, (The Physical Society, London); *Elements of Nuclear Physics*, F. Rasetti, (Prentice-Hall); *The Quantum Theory of Radiation*, W. Heitler (Oxford Press); *Struktur und Eigen-*

schaften der Materie, Vol. 2, H. Sponer (Julius Springer, Berlin); "Nuclear Physics, Stationary States of Nuclei," H. Bethe and R. F. Bacher (*Rev. Mod. Phys.* 8, 82-229). A very attractive book for the general reader is *The Renaissance of Physics*, K. K. Darrow (Macmillan).

NOBEL PRIZES

The Nobel Prize for Physics was shared between V. F. Hess of the University of Innsbruck and C. D. Anderson of the California Institute of Technology. The former first demonstrated 25 years ago that the intensity of cosmic rays increases with increasing altitude, thus disproving the supposition that the rays originate in radioactive materials in the earth. The latter's discovery of the positive electron in 1932 arose during a cloud-chamber study of the particles which are the immediate cause of cosmic ray ionization. In Chemistry the prize was awarded to P. Debye of the Kaiser Wilhelm Institute in Berlin in recognition of his outstanding work on the properties of molecules.

CONCLUSION

The references in this article, which are merely suggestive, are mainly to American journals readily available to the majority of users of this volume. It should not be forgotten that work of a similar character is being done in many foreign countries, and that progress in the physical sciences is achieved by amicable international cooperation.

XXI. CHEMISTRY AND PHYSICS

ORGANIC AND INORGANIC CHEMISTRY

BY CHARLES D. HURD

PROFESSOR, NORTHWESTERN UNIVERSITY

ANALYSIS OF ORGANIC COMPOUNDS

For decades the customary method of analysis of organic compounds has been to burn a definite weight of the substance in a stream of oxygen so as to form carbon dioxide and water both of which are weighed quantitatively. In spite of the wealth of experience with this method, until this year it has never been perfected to the precision desired for atomic weight work. In studying this question, Baxter and Hale (Harvard University) introduced the necessary refinements and developed a technique for carrying out the combustion of organic compounds with amazing accuracy. As a result of their work, it appeared that the atomic weight of carbon should be 12.01 instead of the older value of 12.00. The precision method of analysis has already been applied with success by Fieser and Jacobsen who showed that the degree of accuracy attainable was quite adequate for distinguishing between alternate formulas, even in difficult cases.

OXYGEN AS THE BASIS OF ATOMIC WEIGHTS

Oxygen of atomic weight 16 (exactly) is the present standard of atomic weights. Dole (Northwestern University) has called attention to the need for revision of this standard since oxygen as we know it contains a trace of "heavy oxygen" of mass 18. Dole demonstrated that the quantity of heavy oxygen which occurred in the oxygen from air and from water was not constant. The heavy oxygen was relatively richer in air than in water. Oxygen from the two sources gave these atomic weights: 16.000142 and 16.000034. This means obviously that it is meaningless to express the atomic weight of oxygen to more than four decimal places, but fortunately for most chemical calculations this is rarely required.

FLUORINE STUDIES

Booth and co-workers at Western Reserve University, have used antimony trifluoride as a fluorinating agent in reaction with sulfuryl chloride (SO_2Cl_2) and germanium tetrachloride (GeCl_4). The former gave rise to sulfuryl chlorofluoride, (SO_2ClF), a new gas boiling at 7°C . which is reactive towards water. All of the possible germanium chlorofluorides (GeCl_3F liquid, GeCl_2F_2 gas GeClF_3 gas) as well as germanium tetrafluoride were formed from germanium tetrachloride. The substances were separated readily by distillation. The chlorofluorides fumed in air; also, they displayed a tendency to disproportionate even at -78° into the tetrachloride and the tetrafluoride.

A similar reaction was used by Schumb and Anderson (Massachusetts Institute of Technology) for the preparation of the various silicon bromofluorides from antimony trifluoride and silicon tetrabromide. The same compounds were prepared also by reaction of bromine with hexafluorodisilane (Si_2F_6).

The useful Swarts reaction, namely, the interaction of a chloride with antimony trifluoride, has been employed also by Henne (Ohio State University) in the synthesis of fluorochlorethanes and fluoro-chloroethylenes. It will be recalled that dichlorodifluoromethane (CCl_2F_2) is a compound which has assumed recent industrial importance as a non-hazardous refrigerant. It is prepared similarly from carbon tetrachloride.

EUROPIUM

The method of separation of the very rare element europium from other rare earths in the residues from monazite sand has been developed by McCoy (Lindsay Light Company). This involves reduction with zinc and precipitation of europous sulfate, and provides a means for the investigation of this little-studied element.

ALUMINUM CHLORIDE IN
ORGANIC REACTIONS

An extensive chapter in the chemistry of paraffin, olefin and aromatic hydrocarbons is being revealed as a result of researches conducted this past year in several laboratories. Aluminum chloride has long been recognized as the catalyst which would bring about reaction between benzene or related compounds and a variety of organic halogen compounds, a reaction discovered years ago by Friedel and Crafts. Little thought was paid to the side reactions and it was believed that such compounds as the saturated hydrocarbons would be quite unaffected by this catalyst. Such, however, is not the case.

It has been found by Calingaert and Beatty (Ethyl Gasoline Corporation) that boiling *n*-heptane, in contact with aluminum chloride, gradually decomposes. Among the products of reaction were three hexanes and three or more branched-chain heptanes. Similar findings were reported in work with *n*-pentane by Glasebrook, Phillips and Lovell (General Motors Laboratories). Butanes, isopentane, and high-boiling oils were formed. It should be noted that hydrogen chloride is required with the aluminum chloride. Aluminum bromide, which is quite soluble in pentane, effects its decomposition even in the absence of hydrogen bromide, but more rapidly in its presence.

Ipatieff, Grosse and Komarewsky (Universal Oil Products Company) have discovered that paraffins may be made to react with olefins (such as ethylene) or aromatic hydrocarbons (such as benzene) under the catalytic influence of aluminum chloride and hydrogen chloride. For example, the reaction between benzene and 2,2,4-trimethylpentane (an octane) yields a mixture of mono- and di-*tert*-butylbenzenes and isobutane. This reaction proceeds very smoothly at ordinary temperatures. These investigators have also established that cyclopropane may be added to benzene or isobutane giving, respectively,

propylbenzenes (monopropylbenzene and hexapropylbenzene) and heptanes. Here again, aluminum chloride and hydrogen chloride effects these additions. Ipatieff also demonstrated that when an alkylbenzene is heated with cyclohexane or decahydronaphthalene, the alkyl group is split off to yield the corresponding paraffin. Propyl-, *sec*-butyl-, *tert*-butyl-, and *tert*-amylbenzene when heated with cyclohexane in the presence of aluminum chloride yield, respectively, propane, butane, isobutane and isopentane. Toluene or ethylbenzene, however, are unaffected.

The method of cleaving alkyl groups from aromatic hydrocarbons could serve as a means for a direct measurement of the relative stability of the bond between the alkyl and phenyl radicals in alkylated aromatic hydrocarbons. This method could also be used for direct measurement of the relative stability of the carbon-hydrogen bond in cyclic compounds like cyclohexane, decahydronaphthalene and possibly in some paraffinic hydrocarbons. An important application of the above mentioned reaction is its use in determining the structure of alkyl groups attached to an aromatic nucleus.

Ipatieff's work has also included the polymerization of ethylene by aluminum chloride. This past year, Ipatieff published an important book, *Catalytic Reactions at High Pressure and Temperature*, which deals not only with this phase of his research activity but also with catalytic reactions in general. Dr. Ipatieff regards this work as his scientific autobiography.

Alexander and Fuson (University of Illinois) have also dealt with aluminum chloride reactions. They studied the Friedel and Crafts reaction to learn the origin of the by-products. They observed that aluminum chloride is capable of detaching the elements of benzene from di-, tri- or tetraphenylethanes. Evidently both the cracking and the polymerization of hydrocarbons are readily brought about by aluminum chloride.

BISULFITE COMPOUNDS

After many years of controversy regarding the structure of the potassium bisulfite addition compounds of aldehydes or ketones, Lauer (University of Minnesota) has proved that these compounds are sulfonic salts rather than sulfites. He demonstrated that the acetyl derivative of the substance formed from formaldehyde and bisulfite was identical to the material formed by acetylation of potassium iodomethanesulfonate. Similarly, it was established that the reaction product of ethylene oxide and sodium bisulfite was a sulfonate, not a sulfite. In sulfonates, the sulfur and carbon atoms are attached directly, whereas in sulfites the linkage is C-O-S.

DIOXANE

This heterocyclic compound, which until recent years was a laboratory curiosity, has come into recent prominence industrially as a by-product in the manufacture of ethylene glycol (Prestone). A dichlorodioxane is readily produced from dioxane by chlorination. In treating this substance with arylmagnesium bromides, Summerbell and Bauer (Northwestern University) have been able to synthesize several new diaryldioxanes. Alkylmagnesium bromides, however, instead of yielding the corresponding dialkyldioxanes, brought about a dehalogenation to form dioxene. This new compound was of especial interest since it was found to react readily with hydrogen chloride, giving the hitherto unprepared monochlorodioxane. This compound was unstable and tended to lose hydrogen chloride on standing. Summerbell and Bauer found that the dialkyldioxanes mentioned above could be prepared from dichlorodioxane by substituting the less reactive organic compounds of cadmium instead of magnesium. Dithiane is the sulfur analog of dioxane. It has no industrial importance at the present time, but the chemistry of this class of compounds has been studied by Baker and Barkenbus of the University of Kentucky.

SOURLNESS OF ACIDS

Many attempts have been made in the past to relate the sourness of acids to various other properties such as their hydrogen-ion concentration, normality, vapor pressure, surface tension, etc., but with little success. Beatty and Cragg (University of Toronto) have studied this problem with success. Defining the sourness of a solution as the normality of an equally sour hydrochloric acid, they established for several typical acids that the sourness of an unbuffered solution is expressed mathematically by x/k , wherein x is the volume of a phosphate buffer required to bring a unit volume of the acid to a pH (acidity, expressed in terms of hydrogen ion exponent) of 4.4 and k is a constant characteristic of the buffer selected.

UNSATURATED ALCOHOLS

Considerable advance has been made this past year on the chemistry of unsaturated alcohols. One difficulty in the past has been that of synthesis. Ordinary methods of reduction of unsaturated aldehydes, which are readily obtainable, give rise to saturated alcohols instead of unsaturated. Young, Hartung and Crossley have discovered that aluminum isopropoxide brings about the desired reduction satisfactorily, one of the cases studied being that of crotonaldehyde to crotyl alcohol.

An isomer of crotyl alcohol, made by methylmagnesium iodide on acrolein, is methylvinylcarbinol. It has been thought that both of these alcohols, on reaction with hydrogen bromide, would yield the same compound, namely, crotyl bromide. Weinstein and Young (University of California at L.A.) have demonstrated that this is not the case. Instead, an equilibrium mixture of crotyl and methylvinylcarbinyl bromides is formed which can be separated from each other. The pure compounds change rapidly into the equilibrium mixture, thus explaining the discrepancy previously noted. Various reactions of these substances have been investigated, including stereochemical (cis-trans) relationships. The thermal

equilibrium of the cis-trans isomers of dichloroethylene at high temperatures has been studied by Maroney (University of California).

KETENE

One of the reactions of ketene which has been in controversy for years is its polymerization to "ketene dimer." Two structures have been proposed, namely, acetylketene and cyclobutanedione. Work this past year by Hurd and Williams (Northwestern University) has demonstrated that the former is correct. Reaction with ozone gave definite evidence on the point. The pyrolysis of ketene and acetylketene was studied also. The facts show that the pyrolysis of ketene is a summation process of two competing reactions: (1) polymerization to acetylketene; (2) the high-temperature decomposition of the acetylketene formed in (1). In keeping with this view, ketene and acetylketene were found to yield almost identical products of high-temperature breakdown, namely, methane, carbon and carbon monoxide.

Both ketene and acetylketene are compounds of recent industrial importance. Ketene is produced from acetone by pyrolysis and is used in acetylations. Acetylketene, by reaction with alcohol, changes into acetoacetic ester, which is a compound of major importance for organic synthetic work.

A related compound is ketene diethylacetal, $\text{CH}_2=\text{C}(\text{OC}_2\text{H}_5)_2$, prepared for the first time this year although it has been the subject of polemics for a dozen years. Beyerstedt and McElvain of the University of Wisconsin brought about the successful synthesis. In brief, they exposed ethyl iodoacetal, $\text{CH}_3\text{ICH}(\text{OC}_2\text{H}_5)_2$, to the dehalogenating influence of potassium *tert*-butoxide. This ketene acetal was found to react readily with water and alcohol at room temperatures to yield, respectively, ethyl acetate and ethyl orthoacetate. The last observation makes it seem reasonable that it is the $\text{C}=\text{C}$ position of ketene ($\text{CH}_2=\text{C}=\text{O}$) which is reactive towards alcohol (rather than the $\text{C}=\text{O}$) since it is

the only group held in common by ketene and ketene acetal.

STRUCTURE OF ANTHRACENE

Of the various attempts to account for the special properties of anthracene by means of a special formula, the essentially speculative idea of a reactive para bond which has enjoyed popularity for several decades has been proven to be impossible. Aside from chemical, electrochemical and optical evidence which refutes such a structure, it has been quite definitely eliminated by the x-ray evidence that the carbon atoms of anthracene are practically co-planar and that the distance separating the atoms in question is approximately twice the length of any known carbon-carbon linkage. Fieser and Lathrop (Harvard University) offer strong chemical evidence which indicates that anthracene exists in an orthoquinonoid form. As evidence, they reacted phenolic analogs of anthracene with diazonium solutions to see if coupling occurred with the formation of azo dyes. In some cases the coupling occurred at the position next to the phenolic group; in other cases, where the neighboring position was available, no such reaction occurred. Fieser's interpretation of these results was that for a CH position to be reactive towards coupling, it must be attached to a phenolic carbon (COH) by a double bond (as in $-\text{CH}=\text{C}(\text{OH})-\text{CR}=\text{C}$), a single bond (as in $-\text{CR}=\text{C}(\text{OH})-\text{CH}=\text{C}$). A structure of the latter type is present in 1, 5-dimethyl-2, 6-dihydroxyanthracene if an orthoquinonoid form is assumed. This does not, and should not, couple to form an azo dye.

The same type of reasoning was used to demonstrate the rigidity of the double bonds in naphthalene and hydrindene. On the contrary tetralin (tetrahydronaphthalene), like all ordinary benzene derivatives, exhibits dynamic isomerism and can react in both Kekule forms.

Whether or not the hydroxyl groups in such compounds as o-chlorophenol, catechol, benzoin, ethyl lactate, etc., is bent towards (cis) the

neighboring oxygen substituent, or away from it (trans) seems to be answerable to a study of the infra-red absorption spectra of such compounds in carbon tetrachloride solution. Pauling (California Institute of Technology) has shown that the stereochemical tendency in such cases is predominantly *cis*. This configuration might be described as a weak hydrogen bond, since there seems to be a definite attraction of the hydrogen of the hydroxyl group for the neighboring negative atom (oxygen or chlorine). The same conclusions have been reached by Hilbert, Wulf, Hendricks and Liddel (Bureau of Chemistry and Soils) who determined the infra-red absorption spectra of a number of hydroxyl-containing compounds. The absence of the characteristic hydroxyl spectrum was found to be closely correlated to the presence of a hydrogen bond.

RUBRENE

Ten years ago, Moureu and Dufraisse obtained a 25% yield of a red-orange hydrocarbon, $C_{42}H_{28}$, by heating triphenylpropargyl chloride to 120° . This substance was named rubrene. Its solutions absorbed oxygen to form colorless rubrene peroxide. The structure advocated by the discoverers was a difulvene. It has been proven, however, that this structure is erroneous. Allen and Gilman (McGill University) were able to synthesize rubrene in such a way as to prove its structure as tetraphenyl-naphthacene.

CYANINE DYES AND PHOTOGRAPHY

Eighty years ago Greville Williams discovered the first member of the cyanine dyes, but it was not until about 1920 that much of the chemistry was elucidated. This was done chiefly by Mills and his collaborators. Essentially, these compounds contain two heterocyclic nuclei, one with tertiary nitrogen and one with quaternary nitrogen, the two rings being connected by the $(=CH-n)$ grouping so that a chain of conjugate double bonds connects the two nuclei.

The great commercial value of the

cyanines lies in their power of conferring extra-sensitiveness on silver halide photographic plates. Ordinarily such plates are sensitive only to the violet and blue region of the spectrum, but with suitable cyanine dyes on the emulsion the plates may be rendered remarkably sensitive to green, yellow, orange, red and even to the invisible infra-red portions of the spectrum.

Brooker of the Eastman Kodak Company was particularly active in this field during the past year. He extended the knowledge of this class of compounds greatly and discovered some new cyanine dyes (especially from 2-methylthiazoline as intermediate) which are of especial interest because their absorption bands lie at shorter wave lengths than those of corresponding derivatives of any other heterocyclic base thus far applied to cyanine dye formation. Joy and Bogert (Columbia University) have also synthesized cyanine dyes from sulfur-containing heterocyclic intermediates, namely, the naphthometathiazines. In sensitizing power, however, these thiazine dyes were much weaker than the corresponding naphthothiazole or benzothiazole derivatives.

ANTHOCYANIN PIGMENT OF APPLES

Anthocyanins are the most important group of flower and fruit pigments. Briefly stated, they are glycosides of phenolic substances related to benzopyran. The aglucone of one of the important anthocyanins is cyanidin chloride, a red-colored pigment found in the red rose, blackberry, black cherry, etc. Duncan and Dunstan of the West Virginia Agricultural Experiment Station have isolated the pure anthocyanin pigment of the skin of Winesap apples. It was identified as idaein chloride, a pigment previously isolated from the cranberry. On hydrolysis, it was established that this substance split into cyanidin chloride and galactose.

PYRETHRINS

Haller and LaForge of the Bureau of Entomology and Plant Quarantine

have made considerable progress in the study of the constituents of pyrethrum flowers. The pyrethrins make up one group of insecticides which are of great importance at the present time. It has been known for some time, thanks to the researches of Staudinger and Ruzicka, that the pyrethrins were complex esters, the alcohol portion of which was pyrethrolone. As its name suggests, it is a keto-alcohol; in addition, it is cyclic and olefinic. Instead of two cumulative double bonds (*i.e.* an allene structure) to represent the olefin characteristics, LaForge and Haller have shown that three double bonds exist and that these are probably conjugated (*i.e.* alternately single and double bonds). In the present work, the pyrethrins were purified by distillation in a molecular still, a procedure which was not available to the earlier workers.

LAPACHOL

A series of eleven papers on lapachol, lomatiol and related compounds was published this year posthumously by S. C. Hooker. Lapachol is an isopentenylhydroxynaphthoquinone. Alkaline potassium permanganate was found to promote a very curious type of oxidation. Lapachol changed by loss of a methylene group into isobutenylhydroxynaphthoquinone. In this oxidation, the first step of the oxidation is an opening of the quinone ring. This is followed by ring closure with the net result that the side-chain and the hydroxyl group apparently exchanged places but that the side-chain was smaller by one carbon atom. Several compounds related to lapachol were submitted to this Hooker oxidation, all of which behaved analogously.

Lapachol is a natural product found in the grain of a number of South American woods. The lapacho tree from which it derives its name, grows plentifully in Argentina, yielding a wood which may contain as much as 7% of lapachol. A related compound is lomatiol, obtained as the yellow coloring matter of seeds of several varieties of *Lomatia* from Australia, although related varieties of *Lomatia*

from Chile yielded none. Lomatiol was proved to be a hydroxylapachol, the extra hydroxy group being at the end of the isopentenyl chain so as to make a configuration related to that in allyl alcohol.

PORPHIN

Rothemund (Kettering Foundation, Antioch College) has described a synthesis of porphin, the fundamental structure of the physiologically important pigments hemin and chlorophyll, from pyrrole and formaldehyde at 90°. Other aldehydes have been used also to produce related substances. The magnesium salt (porphin phyllin) was red, the iron salt (porphin hemin) was brown, and the copper salt was brick red. This is the first time that the porphyrin nucleus has been synthesized starting with pyrrole.

STEROLS

The great advances in phenanthrene chemistry mentioned in last year's report have been maintained in work of the present year. In an interesting paper, Marker, Whitmore, Kamm, Oakwood and Blatterman (Penn State College and Parke, Davis and Company) describe the synthesis of 3-chloro-5-dehydroandrosterone from cholesterol. This substance can be converted into any of the three known naturally-occurring male hormones (androsterone, 5-dehydro isoandrosterone, and testosterone). Marker, Kamm, Oakwood and Laucius have also succeeded in synthesizing oestrone (theelin), one of the two female hormones. The starting point in this important synthesis was ergosterol.

In this connection mention should be made of an important book by Fieser, *The Chemistry of Natural Products related to Phenanthrene*. Professor Fieser has collected all the data in this rapidly growing field and presented it in a brilliant manner.

VITAMIN B

The synthesis of this antineuritic vitamin has been accomplished this year by Williams (Columbia Univer-

sity) and Cline (Merck and Company). It was foreshadowed in the report of last year because of the elucidation of its structure. The synthesis, however, is a distinct triumph and completes a phase of work started by Williams 26 years ago. This work has also stimulated Caldwell and Ziegler (Temple University) to synthesize several new pyrimidines related to the pyrimidine half of the vitamin. Vitamin B₁ is a substituted pyrimidine thiazole. Buchman (Johns

Hopkins University) has succeeded in perfecting a satisfactory synthesis for the thiazole half of the vitamin.

NECROLOGY

It is a sad duty to record the deaths of two chemists who have been particularly prominent in the development of American Chemistry—A. A. Noyes of California Institute of Technology and J. A. Nieuwland of Notre Dame University.

ELECTROCHEMISTRY

BY COLIN G. FINK

PROFESSOR, COLUMBIA UNIVERSITY

ELECTRODEPOSITION

The outstanding development in electrochemistry during 1936 was the electrodeposition of manganese, 99.9% pure, in any quantity and with comparative ease. Heretofore, pure manganese metal was a mere museum curiosity. Three laboratories contributed to the perfection and development of the metal—Washington State College, U.S. Bureau of Mines, and Columbia University. Manganese metal is almost silver white and, when properly prepared, it is stable in the atmosphere indefinitely. The electrolyte used is an aqueous solution of manganese, ammonium sulfate.

The year also marked the commercialization of the Fink electrotin process to take the place of the old hot dip tin-plate process. The new product is very much superior to the older one due to its freedom from pin holes.

William P. Price and O. W. Brown of Indiana University have electroplated molybdenum onto various basic metals from aqueous solutions. The deposits are steel gray in appearance. W. E. Bradt and H. B. Linford of Pullman, Washington, succeeded in electrodepositing zirconium from aqueous solutions of sodium-zirconyl sulfate.

In the commercial electroplating field the introduction of so-called "wetting agents"—complex chemical

compounds which are added to the plating bath—has resulted in marked improvements in the quality of nickel and other plates, in particular as regards the decided reduction in pin holes.

Interesting experiments have been conducted at various laboratories on the effect of very high pitched musical notes on the appearance of electrodeposits. Thus, for example, W. T. Young and H. Kersten found that sound waves with a frequency of 1,700 kilocycles produced ripples in electrodeposits of cobalt, iron, cadmium and zinc.

The electrolytic zinc industry was confronted with demands for cadmium metal, its chief by-product, which were far ahead of production. In consequence, the price for cadmium almost doubled. Cadmium-rich alloys have been found to be acceptable substitutes for babbitt bearing metal, thus tending to make the United States independent of imported tin. Indium metal, another by-product of the zinc industry, has been alloyed with cadmium, bismuth and lead and produced a new alloy which melts at 47° Centigrade. Corrosion tests carried out by the U. S. Bureau of Standards indicate that cadmium-plated steel is much more resistant to atmospheric corrosion than zinc-plated steel, either hot dipped or electrogalvanized.

THE ELECTRIC FURNACE AND ITS PRODUCTS

M. G. Toole and R. E. Gould of the Tennessee Valley Authority reported at length upon their successful accomplishment of the electric firing of china and porcelain, a feat which high authorities in the ceramic field considered impossible but a few years ago. The electric furnace porcelain is thoroughly fired and very attractive. A new field for the electric furnace has thus been opened up. The freedom from objectionable impurities in the electric furnace atmosphere is one of the minor advantages whereas accurate control of firing temperature (1450°C.) and firing time is the chief advantage of electric firing.

The Ajax Electric Company has introduced a new salt bath electric furnace used for heat-treating steel. The vital subject of "Power for Electric Furnaces" was discussed by national authorities at the fall meeting of the Electrochemical Society. Although hydro-electric power is most generally used today, the outstanding improvements in steam electric and diesel power offer serious competition as time goes on.

M. M. Austin reported at length upon the superiority of tantalum carbide as a high speed tool and die material.

FUSED ELECTROLYTES

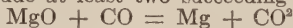
The production of sodium metal ranks with that of major metals such as nickel. Tank cars that hold 40 tons of sodium metal are railroaded across the country. A new process for the production of sodium metal has been introduced. This consists in cathodically producing a sodium amalgam and thereupon fractionating this, returning the mercury to the cathode compartment of the elec-

trolytic cell. Common sea salt is used as raw material. Most of the sodium metal produced is consumed by the dye and per-salt industries. A number of highways are now lighted with the sodium arc lamps.

Magnesium metal is being regularly produced by the electrolysis of fused magnesium chloride. However, two American companies have, during the past year, devoted considerable time and effort to the electric furnace method which is based on the simple relation:



Probably the reactions involved include at least two succeeding stages:



Hugh S. Cooper has patented an alloy of magnesium with 35 to 50 per cent strontium metal, likewise produced by fused electrolyte methods, which is used in the vacuum tube industry as a "clean up" agent.

ELECTRONICS

The electronic field, in particular that of the photoelectric devices, has been unusually active. Hundreds of applications of photoelectric cells have become so common now that the public accepts the cell as an "old established" general utility device. Fluorescent lamps incorporating willemite, calcium tungstate and related compounds have entered the manufacturing stage. A new tungsten lamp with a bright silver reflector inside the lamp has been marketed. It is superior to older types. The high pressure mercury arc lamp is the new lamp of tomorrow. A number of serious manufacturing difficulties have been successfully conquered. The light of this new mercury lamp is much whiter than that of the older type seen in photographic studios.

XXI. CHEMISTRY AND PHYSICS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| AMERICAN CHEMICAL SOCIETY, 728 Mills Bldg., Washington, D. C. | CHEMISTS, University of Michigan, Ann Arbor, Mich. |
| AMERICAN ELECTROCHEMICAL SOCIETY, Broadway and 117th Street, New York City. | ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS, Box 290, Penn. Ave. Station, Washington D. C. |
| AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Bellevue Court Building, Philadelphia, Pa. | COPPER AND BRASS RESEARCH ASSN., 420 Lexington Ave., New York City. |
| AMERICAN INSTITUTE OF PHYSICS, 175 Fifth Ave., New York City. | NATIONAL RESEARCH COUNCIL, 29 W. 39th St., New York City. |
| AMERICAN MICROSCOPICAL SOCIETY, Kansas State College, Manhattan, Kan. | SOCIETY OF CHEMICAL INDUSTRY, Pratt Institute, Brooklyn, New York City. |
| AMERICAN PHYSICAL SOCIETY, Columbia University, New York City. | SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSN., 260 W. Broadway, New York City. |
| AMERICAN SOCIETY OF BIOLOGICAL | |

DIVISION XXII

BIOLOGY

ORGANIC EVOLUTION AND GENETICS

BY MYRON GORDON

ZOOLOGICAL LABORATORY, CORNELL UNIVERSITY

PROBLEMS OF SPECIES ORIGINS

"There is a general feeling among specialists in other departments of biology that the geneticist has made no contributions toward the solution of the more general problems of species origin." With this self imposed challenge, Professor E. M. East of Harvard University opened his contribution at a joint symposium, on "The Species Problem," of the American Society of Zoologists and the American Genetics Society at Princeton University, Dec. 30, 1935. Professor East immediately pointed out that the most important single obstacle in the path of Darwin's rationalization of the evolution process was the current reliance on the principle of blending inheritance. Geneticists during the first third of this century have swept this impediment away. They established the particulate theory of inheritance, with units of heredity arranged in linear fashion in the chromosomes and distributed by definite laws, and made it possible to calculate precisely what must happen to a given population under any particular system of breeding when the type of chromosome mechanism existing in the population is known. Dr. East indicated that the chromosome mechanisms have been typed for thousands of groups and he continues: It only remains, then, to calculate the end results of the process or processes involved when appropriate

values are given to mutation rates, to survival values and to other pertinent factors. . . . The facts are that we possess today body of ascertained knowledge about heredity so great and so well organized that its implications solve for us something like half of the problems of evolutionary methodology that puzzled Darwin."

Professor East is cautious and points out that new difficulties have arisen in connection with the significance of variations which are the raw material for evolution. "Here," Dr. East says, "I think, some just criticism lies against geneticists for being too much concerned, perhaps, with specific theorems of inheritance and not sufficiently concerned with the bearing of these theorems on evolution."

GENE CHANGES AND CHROMATIN REARRANGEMENTS

East, the geneticist, groups variations, the primary phenomena of organic evolution, under two divisions: (1) gene changes; (2) chromatin rearrangements. The factors of reproductive value, population pressure, species competition, migration, isolation are of secondary importance. With respect to chromatin rearrangement the importance of the following were indicated: (1) inversion of a block of genes and its possible physiological response; (2) simple translocation, whereby a block of genes changes its party affiliations from one chromosome to another;

(this process East suggests may provide for a reduction in chromosome number); (3) reciprocal translocation, without gain or loss of chromatin. The case of *Oenothera* is mentioned in this connection.

Professor East lays emphasis on the relative importance of the loss or gain of existing chromatin. "It is hard to imagine how the loss of chromatin could have been an important means of advancing organic evolution" but "the addition of complete genomes is of more consequence, but only in plants," since chromatin rearrangement can only be perpetuated in asexual organisms. Gene mutation, however, is unquestionably a phenomenon of unparalleled importance in organic evolution. "Here the material is obtained for novel patterns. A careful scrutiny of gene changes and gene activity, therefore, ought to give us a clearer impression of how physiologic differentiation has come about."

In an analysis of the better known species whose germ-plasm architecture is worked out in detail, *Drosophila melanogaster* and Zea Mays, 1,000 mutant genes are known for the fly and 400 for corn. Analysis shows that majority by far of the mutations are less viable than the wild type genes and represent retrogressive simplifications—not material for evolution. The number of viable or more viable than wild type genes is small, as detected up to the present time. But Professor East claims that they are really numerous. They are generally overlooked for they are easily overlooked. He refers to his own work with crosses of *Nicotiana* which was reviewed in THE AMERICAN YEAR BOOK for 1935. What is needed at this point of study is the development of micrometric methods to detect and record the many slight but all-important changes that are just as truly mutations as large visible changes and are quite apt to be constructive in character.

Dr. East concludes by saying that: "Formal solution of the more pressing evolutionary problems presented to the consideration of biologists from Darwin's time onward is pos-

sible, provided stress is laid almost exclusively upon constructive gene mutations fitting the pre-existing patterns of gene activity. Raw materials of this exist in quantity. It meets the requirements of physiology. It satisfies the demands of taxonomy. And it places orthogenesis on a sensible basis of chemical theory."

SPECIES RELATIONS

While not in a direct line of the geneticists' experimental approach to the problem of evolution, the views of Professor W. H. Longley of Goucher College have been sought by the American Genetics Society at their symposium on the species problem. Dr. Longley sees the problem in terms of a diversity of organic forms in the world and the way in which they have come into being. He studies *species* and believes that, if they are the product of evolution, a study of the relation in which they stand to one another should reveal the nature of the process. His summary published in *The American Naturalist*, 70: 97-109, is as follows:

"Species are natural populations, upon the whole sharply distinct from one another. In internal structure and in their relations to one another in space and in time they show that they were made by a process of evolution in which hereditary variation and natural selection are factors.

"Evolution itself is the process of differentiation of a compound population. Compound populations differentiate according to law, as definitely as simple ones increase according to law under appropriate conditions.

"The laws of populations, simple and compound, at bottom are laws of the same sort as laws of gases and solutions, and owe their existence fundamentally to the same cause. Gases, solutions, populations are systems of active units acting upon one another at random, differing from one another in secondary attributes, but tending, however disturbed, to return to equilibrium."

ORGANIC EVOLUTION AND GENETICS

CONTRIBUTION OF PHYSIOLOGY

Another contributor to the symposium outside the direct line of the geneticists' field of activity on the species problem is the physiologist, Professor A. C. Redfield of Harvard University, who presented his views on "The distribution of physiological and chemical peculiarities in 'natural' groups of organisms," in *The American Naturalist*, 70: 110-122. Professor Redfield points out that classical evolutionary theory is based primarily upon morphological data of the comparative anatomist concentrating upon instances of homologies and ruling out analogous structures in organisms. Physiologists have not been able to contribute to the evolutionary theory because much of their data reflects only a summary of analogous physiological conditions in organisms. Physiologists must rely upon the basic morphological data of homologies of the comparative anatomist. Physiologists cannot lead in the study of evolution. They can only fill in the details, elaborate the conditions, and analyze the special differences in terms of physical-chemical changes.

"The chief contribution of physiology," Dr. Redfield states, "to the species problem appears to me to lie in the more complete description which it affords of the nature of the organism and which enables us to analyze with more intelligence the phenomena of fitness, adaptation and survival."

Dr. Redfield mentions the importance of realizing the limitations which the chemical nature of organisms places on the nature of variations. He refers to C. F. A. Pantin's suggestions (*Linnean Society's journal Zoology* 37:705-711, 1932). The chemical materials of living bodies are each entities, characterized by specific atomic composition and arrangement. The more complex molecules are, it is true, combined from numerous simpler units, as in the case of proteins and some variation and gradation in their properties is obtained by combining these units in different ways.

Even these complex molecules can only be made of certain kinds of units and modified by changing whole units at a time. Frequently, as in the case of hemoglobin, successful function is dependent on the presence of a particular unit in the large complex. It results that the organism can never be infinitely plastic. Its variation is limited by the variation of its chemical substance. It must occur step by step, each step as discrete as those which separate the species which chemists designate as different compounds.

Before chemical factors can aid the physiologists in understanding the evolutionary problem, criteria must be developed for judging true homologies. "This will come as we learn more of the origins of the substances we find in particular organisms and understand something of the mechanisms underlying their multiplication and variation," Professor Redfield concludes.

THE FACTOR OF STERILITY

One of the outstanding features in the field of evolution of distinct species is the factor of sterility which intervenes when species are crossed with one another. Professor Curt Stern of the University of Rochester reviewed the subject of "Interspecific Sterility" at the Zoologists-Geneticists symposium on "The Species Problem," and it appears in *The American Naturalist*, 70: 123-142. Dr. Stern points to the importance this subject has in evolution studies when the late Bateson, one of the leading English biologists stated as late as 1922 that "until this event"—the origin of a steril hybrid from fertile parents of common origin—is witnessed, our knowledge of evolution is incomplete in a vital respect."

Dr. Stern states that the phenomenon of interspecific sterility covers many conditions. One extreme is represented by the inability or unwillingness of two species to permit a union of their gametes. The other is represented by the appearance of hybrids, vigorous somatically, but feebly able to produce virile gametes, capable of effective fertilization.

The phenomenon of interspecific sterility may be seen in the inability of many hybrid zygotes to develop normally early in life, with the consequence that the development of vital organs necessary for the life of the individual is incomplete or entirely disharmonious and death is the result. If the vital organs are not seriously handicapped, the hybrids will grow to full size and function. But they fail in the production of functioning gametes in animals, or of flowers or in spores in higher plants. "Failure in these stages does not affect the individual, due to a high degree of independence of soma and germinal cells; but it results in sterility. Lack of production of viable offspring and sterility of hybrids in interspecific crosses are thus essentially similar."

With respect to the genetic basis of interspecific sterility there is a definite factor in "disharmonious gene combinations" in some instances. There are cases also where chromosomal disharmonies bring about sterility. But there are many cases where single genic changes cannot bring about differentiation of zygotically intersterile lines and even single or multiple chromosomal changes fail to cause such differentiation. "What," Dr. Curt Stern asks, "is the genetic basis of interspecific sterility? Clearly," he says, "it is a *complex* differentiation, founded on the presence of many genic differences."

The evolutionary origin of interspecific sterility occurred in more than a single step. The accumulation of genic differences in species, if carried far enough, brings about the production of unbalanced hybrid zygotes. They are a by-product of evolution. In reference to an earlier statement of Bateson to the need of obtaining a sterile hybrid from fertile parents of common origin—that is sterile with its parental species but fertile among themselves—the opinion of Professor R. K. Nabours of Kansas Agricultural Experimental Station is that these conditions have been met successfully by E. W. Lindstrom, E. B. Babcock and others with individuals of

tomato, crepis and other plants under rigid experimental control. "If this crucial feat can be accomplished successfully and consistently and over a wide range of plants and animals, it may be considered a very high measure of the effectiveness of genetics as an instrument for solving some of the problems of the transmutation of species and evolution." (*The American Naturalist* 70: 191-192).

PHYSIOLOGY OF DEVELOPMENT AND GENETICS

Dr. E. E. Just of Howard University has put forth "a single theory for the physiology of development and genetics" in *The American Naturalist*, supplement 70:267-312. Dr. Just claims that embryologists who adhere to the theory of embryonic segregation and the geneticists who uphold the gene-theory of segregation of genes are at odds. Just says: "I propose to show . . . that this antagonism is unwarranted because there exists no real irreconcilability between the physiology of development and genetics."

The gene-theory of heredity as formulated by its upholders states that every cell in the body of the adult organism contains the same complex genes—unchanged descendants of those in the fertilized egg. The very unchanging character of the genes, while it may render the assumption that they control heredity apparently very easily, makes it difficult to ascribe to them a similar control in development which is so expressedly a series of manifold differentiations. When gene-theorists postulate that the genes order the progressive differentiation of development by liberating to the cytoplasm at different stages a different something which brings about the differentiation, they deal wholly in speculation without any basis of fact. Just, equally, objects to the theory of differentiation along the lines of "embryonic segregation" in that the term implies preformation, does not refer to a visible event during differentiation and it is purely teleological.

Dr. Just says: "I . . . consider that the progressive differentiation of the egg during cleavage is not the result of the pouring out of stuffs by the chromosomes into the cytoplasm, nor that of segregation of embryonic materials, but more truly the result of a genetic restriction of potencies, by the removal of stuff from the cytoplasm to the nuclei, the restriction being related in turn to the they would become pluripotent.

The potencies for embryo-formation are all present in the uncleaved egg. The egg loses pluripotency early or late after fertilization. The first step in restriction is this loss of pluripotency. After germ cells have become differentiated from somatic through the loss to their nuclei of all potencies with only the potencies for germ-cells left free in their cytoplasm, they become isolated from the soma. This isolation brings about the escape of all potencies that were up to that time bound in the nucleus, into the cytoplasm. Thus they would become pluripotent."

"The value of the theory of genetic restriction is brought out by the fact," Just continues, "that it offers an explanation for each of the following phenomena: (1) polyembryony; (2) merogony; (3) development of diploid fragments; (4) development of isolated blastomeres; (5) asexual reproduction." For details Just's original paper should be referred to.

THE GENE IN HEREDITY

In interpreting the role of the gene in heredity Just's fundamental thesis is that the "genes act by removing stuff from the cytoplasm." He claims these advantages for his interpretation. "First, it does not over-reach itself as does the gene-theory; it needs fewer assumptions. Second, it is consistent with the known facts both of differentiation and of genetics. Third, it is far more physiological, less mechanical and is consonant with our knowledge of cell metabolism. Fourth, it does not violate the principle that nuclei-cytoplasmic organization, the protoplasmic system is a unit."

Just's fundamental thesis is that all the differences—"i.e., differentiation that appear during development rest upon cytoplasmic reactions. These are made possible through the removal of obstacles by nuclei, hence by chromosomes and genes. The nuclei by this removal release the activity of the cytoplasm in one direction. Then the genes act by removing impediments to cytoplasmic reactions." Just continues to examine this proposition more closely.

Just's picture of the morphological unit and the physiological processes which denote the state of being alive is the ever-changing ectoplasm in contact with the environment, on one side, and on the other, the chromosomes, static change-resistance; and the ground substance between whence both ectoplasm and nucleus arose. "Nucleus and cytoplasm (endo-ectoplasm) render the cell a stable structural unit. Interaction between nucleus and cytoplasm gives physiological stability, equilibrium; the nucleus frees the cytoplasm to further activity. At the cell surface, the ectoplasm conditions cytoplasmic activity. Always the protoplasmic system is the unit of life. And where we trace the development from egg to adult, we see that differentiation is inherited and heredity is a part of differentiation."

DEVELOPMENT OF THE STUDY OF GENETICS

In his review of "Twenty-five years of Genetics, 1910-1935" published in the *Brooklyn Botanic Garden Memoirs* 4:29-40, 1936, Dr Albert F. Blakeslee, the Director of the Department of Genetics of the Carnegie Institution of Washington at Cold Spring Harbor, Long Island, N. Y., presents a rapid-fire story of the development of the study of genetics in this country. He gives us something of the accomplishments and something of the nature of future trends.

Dr. Blakeslee mentions a dozen organisms which have been used extensively as genetic reagents, listing them according to the number of known gene types. For the plants,

maize (our American corn) is mentioned first with 250 known genes. The snapdragon is next with about 200 known genes. It is followed by the Japanese morning glory with about 110 genes, and the garden pea with about 100. Dr. Blakeslee's own pet plant, the jimson weed, has 40 definitely located genes and about 200 or more which are being tracked down. The sixth plant in the geneticist role of honor is the sweet pea with 20 known genes.

Among the animals, the fruit fly is in first place by a large margin with 500 to 600 genes. A parasitic wasp made famous by Professor Whiting has 75 genes. The domestic fowl, according to Professor D. C. Warren, has 40 to 50 genes. In man Dr. Davenport reports that only 25 to 50 genes are known in the same manner as genes in other organisms are known. The rabbit has 16 and the mouse has 25 genes.

Professor Blakeslee mentions three techniques which have aided geneticists in their work: first, the acetocarmine-iron staining of chromosomes in fresh material; second, the induction of mutations by radiation treatment; third, the discovery of the details in the chromosomes of the cells of the salivary glands. These chromosomes are 170 times as large as chromosomes in other cells of the fruit fly.

It is only within the last few years that the methods used in genetics have been applied in an attack on evolutionary problems. The conclusion is being reached that the problem of evolution of species may most profitably be investigated in terms of the evolution of their chromosomes. It is seen that blocks

of chromosomal material with their genes can be readily shifted from one chromosome to another. As Professor Blakeslee states: "Many of us have felt the inadequacy in accounting for the origin of new species by the mutation of single genes one at a time and have looked rather for differences involving whole blocks of genes. It was with considerable satisfaction, therefore, that we learned that the salivary chromosomes in *Drosophila* show reduplication areas in the chromosomes and this gives support to the idea of evolution by change in chromosomal balance." Many experiments in the greenhouse and garden have revealed the nature of events found in the wild state. Hybridization studies have yielded new types, perhaps new species, man-made.

Geneticists now consider that the environment moulds forms by selecting out of a highly heterozygous population those genes of most value in a given environment. They do not believe that the environment exerts a direct effect upon the organism.

Blakeslee takes two glances into the future: "1. Our last 25 years have brought us again to the species problem. I believe the study of evolution will become increasingly active. It will differ from Darwin's time in that it will be experimental and analytical. It will resolve itself into a study of the evolution of the brass tacks of genetics—genes and chromosomes. 2. When we have learned the mechanisms of evolution, I believe we shall be able, in ways and to an extent impossible to imagine at the present time, to exercise conscious control of evolution."

ECONOMIC BOTANY

ECONOMIC BOTANY

By H. K. WILSON

ASSOCIATE PROFESSOR, UNIVERSITY OF MINNESOTA

STUDIES OF THE DEPARTMENT OF AGRICULTURE

An excellent contribution in the field of plant science publications is found in the 1936 *Yearbook* of the United States Department of Agriculture. Secretary Henry A. Wallace writes: "The science of the quality of life as it passes from generation to generation is in many respects the greatest and youngest of all the sciences. While the art of plant and animal breeding is an old one, the science of plant and animal genetics dates only to 1900. So far as known this *Yearbook* is the first comprehensive effort to survey superior germ plasm in the leading plants and animals. The *Yearbook* shows how much we know and also how much more we should know but do not as yet. True, the science of genetics is still young and growing. I trust that the day will come when humanity will take as great an interest in the creation of superior forms of life as it has taken in past years in the perfection of superior forms of machinery. In the long run superior life forms may prove to have a greater profit for mankind than machinery."

A committee of scientists made a survey of the superior germ plasm in plants to be found in the various research institutions of the country. The findings of the committee have been assembled and published in the *Yearbook*. The results of the survey are given, together with a historical summary of what has been done in the past, a discussion of present work and future possibilities, a discussion of the methods employed in breeding and in most instances a brief interpretation of theoretical research dealing with inheritance in each particular plant.

Economic plants discussed in the *Yearbook* include wheat, barley, oats, rice, corn, sorghums, sugar cane, sugar beets, cotton, flax, and tobacco. The series will be continued in the 1937

Yearbook with articles on vegetable, fruit, and forage plants, flowers, and forest, and nut trees.

The *Yearbook* of the United States Department of Agriculture presents to a vast audience, many of whom have had no scientific training in the field of plant improvement, a simple but concise and reliable discussion of practices employed by plant scientists engaged in the improvement of economic plants.

CORN IMPROVEMENT

Jenkins (*Iowa State College Journal of Science* IX: 429-450, 1935) reports the effect of inbreeding and selection within inbred lines of maize upon the hybrids made after successive generations of selfing. Fourteen lines from Iodent and 14 lines from Lancaster Surecrop from the first to the eighth generation of inbreeding were used in this study. His results show that selection between sister progenies was effective in choosing the progenies whose crosses were slightly but consistently better than their discarded sister lines. The greatest differences were found during the early generations of inbreeding. Inbreeding and selection were ineffective in improving strains in respect to their productiveness in top crosses or in any of the other characters. Inbred lines, particularly those from Iodent, acquired their individuality as parents of top crosses in the early generations of inbreeding and remained fairly constant thereafter.

Jenkins explains these results on the assumption that yield is controlled by a large number of genes many of which are of nearly equal influence. As these genes become fixed by selfing, the selection practiced tends to sample the modal class in each generation.

The author suggests that since the lines acquire their individuality in combining ability in the early generations of inbreeding, selection should

be practiced among lines rather than within lines. Top cross tests in the earlier generations of inbreeding may be used to eliminate poor combining lines, and selection in the later generations may be used for the improvement of characters within the line.

In studies of the testing and utilization of inbred lines of corn, Jones and Singleton (*Conn. [New Haven] Station Bulletin 376, 1935*) show that, in general, crosses between productive inbred lines tend to be somewhat superior to crosses made between unproductive inbred lines. Crosses between good and poor lines resulted in intermediate yields. The differences were not significant. In double crosses combining 0 to 3 good lines there was a barely significant increase in the double crosses from three good strains over those having none. In a study of the effect of selecting for good lines on the basis of their yield and desirable plant characters, no pronounced relation was found between the yield of good lines as tested in top crosses in comparison with unselected lines. When crossed seed of the same inbred parents was produced under widely different conditions of latitude and climate, no differences in yield of the F_1 hybrids were obtained when all lots were grown in Connecticut.

Johnson and Hayes (*Journal of the American Society of Agronomy 28: 246-252, 1936*) in studies of the combining ability of inbred lines of Golden Bantam sweet corn show that inbred lines that give high yields in top crosses are more likely to produce the best single crosses than the inbreds that give low yield in top crosses. In this study, no really superior germ plasm would have been lost by discarding inbred lines that gave low yields in top crosses. In a study of the relation between characters of inbred lines and combining ability as measured by top cross yields, ear length and stalk diameter of inbred lines were positively associated with top cross yields, while the number of suckers per plant was negatively associated with top cross yields. The yield of the inbred lines

was not significantly associated with combining ability in top crosses either in simple or partial correlations.

Doxtator and Johnson (*Journal of the American Society of Agronomy 28: 460-462, 1936*) in studies of corn breeding methods show that highly significant differences in yielding ability can be found in double crosses resulting from the use of different single cross parents produced from four inbred lines. The results obtained also indicate that by the appropriate use of single cross data, the highest yielding double and three-way cross combination may be predicted.

WHEAT CLASSIFICATION AND NEW VARIETIES

Clark and Bayles (*United States Department of Agriculture Technical Bulletin 459, 1935*) have issued a revised classification of wheat varieties grown in the United States. This classification describes all leading varieties of commercial importance in the United States together with their distribution and acreages.

Relief wheat, a new hard red winter wheat, fairly resistant to most forms of covered smut occurring in Utah, is a selection from a Hussar x Turkey 26 cross made at the Utah station and reported by Tingey and Woodward (*Utah Station Bulletin 264, 1935*). The new variety resembles Turkey in general appearance, and its yield, quality, growth habit and date of maturity are about the same as for Turkey or Utah Kanred. Its resistance to various forms of covered smut makes it especially promising for central and northern Utah and southern Idaho. The variety also possesses yielding ability, winter hardiness, and desirable milling qualities.

Garber and Bennett (*West Virginia Station Bulletin 272, 1936*) report the development of a new variety of soft red winter wheat. This variety has been named Canawa from the three words Canada and West Virginia. The variety originated from a single head selected from a mixed variety grown on the agronomy farm in 1921

under the name of Canada Hybrid. Canawa has shown yielding ability equal to that of Fulhio, a high yielding wheat under West Virginia conditions.

KINGWA SOYBEANS

Garber (*West Virginia Station Bulletin 273*, 1936) reports a new pure line variety of soybeans developed by the West Virginia station and named Kingwa. Two pure line selections were made from the commercial Peking lot. One was distributed as Pekwa, the other as Kingwa. As the two varieties are practically indistinguishable it is proposed that the distribution be limited to the variety formerly known as Pekwa and this variety be known in the future as Kingwa. The variety has marked ability to retain leaves even after the pods are ripe, has relatively fine stems, and an erect habit of growth.

NEW POTATOES

In trials in Michigan, North Dakota, Oregon and Idaho, Katahdin, an improved variety of potatoes, showed ability to produce a good crop of tubers under rather adverse conditions as reported by Clark and Stevenson (*United States Department of Agriculture Circular 374*, 1935). Indications are that the variety will at least partially replace present standard varieties in certain sections of Michigan, Iowa, New Jersey, Oregon, northern Idaho, and the higher altitudes of Colorado. The Chippewa, another new variety, has shown a wide range of adaptability in North Dakota, Minnesota, Michigan, Iowa, New Jersey, Florida, and Louisiana. The Golden potato, a late maturing variety with yellow flesh, produced a large yield of medium-sized round tubers with rather shallow eyes, and ranks high in cooking qualities. This variety seems to be especially adapted to northern Maine.

DISEASE RESISTANT MUSKMELON

Currence and Leach (*Proceedings of the American Society for Horticultural Science 31*: 481-482, 1934) report progress in the development of muskmelon strains resistant to Fusar-

ium. Some of the seedlings, honeydew-like in appearance but earlier in maturity, appear to be highly resistant and to give promise as improved varieties.

NEW VARIETIES OF TOMATOES

Huelsen reports three new Fusarium wilt resistant field varieties of tomatoes, Prairiana, Early Baltimore, and Illinois Price, and five new Fusarium wilt resistant greenhouse varieties, Blair Forcing, Sureset Forcing, Urbana Forcing, Lloyd Forcing, and Long Calyx Forcing. All of these varieties were developed at the Illinois station. In *Illinois Station Circular 448*, 1936 data are presented showing the yields of these varieties as compared with standard sorts. Porte *et al.* (*United States Department of Agriculture Circular 388*, 1936) report the production of an improved pink fruited local market and shipping tomato produced as a result of cooperative work with the United States Department of Agriculture and the Florida Experiment Station. This variety, known as Marvel, was produced by crossing the Globe and the Marvel varieties.

Nystate, a new hybrid tomato of considerable promise, is reported by Sayre (*Farm Research New York State Station 2*, 1936). The new variety is adapted to both market gardens and commercial cannery uses. It yielded highest among 30 varieties tested in 1935. The fruits are described as large, symmetrical, deep red in color, and free from green around the stem end.

IMPROVED FRUIT VARIETIES

In an article by Alderman (*Minnesota Horticulturist 64*: 23-24, 1936) the Minnesota Experiment Station announces the development of two new seedling fruits, namely the Beacon apple and the Ember plum. These varieties have been tested thoroughly and give promise as being worthy additions to the fruit growers of the Northwest.

Slate (*Farm Research New York State Station 2*: 1-11, 1936) gives a brief description of the characteristics and potential value of Taylor, a

new red raspberry developed from a cross of Newman and Lloyd George. The fruit is described as being very large, long conic in shape, and possessed of firm flesh of a quality approaching that of Cuthbert.

Four new citrus varieties, the Kara, Kinnow, and Wilking mandarins and the Trovita orange have been developed by the citrus experiment station at Riverside, California. These fruits resulted from seedlings selected by Frost and reported in *California Station Bulletin* 597, 1935.

STORAGE OF FLOWER BULBS

Griffiths (*United States Department of Agriculture Circular* 376, 1936) in studies of speeding of flowering in the daffodil and the bulbous iris found that cold storage of narcissus bulbs throughout their entire storage season resulted in a decided acceleration of flowering accompanied by severe dwarfing. He found that warm storage until August followed by constant temperature of 50°F up to potting time is good practice. Bulbs for potting after December 1 should, after the period of warm storage, be held at 40-55° up to the time of planting. Irises were benefited by a preliminary heat treatment of 80° from digging time to August.

FORAGE AND PASTURE CROP IMPROVEMENT

A promising new legume, the wild pea (*Astragalus ruby*, n. sp.), is reported by Green and Morris (*Journal of the American Society of Agronomy* 27:546-549, 1935) as having been found by the Montana Experiment Station in the Ruby Valley. This legume was growing in a high lime soil on moisture bottom land which contained more or less alkali. It grows from the crown of a woody root, the slender stems reaching a length of four feet and bearing many leaves three to five inches long. In many instances the plants mat over the ground, crowding out other vegetation and thus forming relatively pure stands. An abundance of seed is produced, the seed being about the size of alfalfa seed. The roots of the plant are similar to those of alfalfa

and bear many nodules, thus indicating the nitrogen fixing power of the plant. The plant resembles alfalfa in its content of protein, nitrogen-free extract, crude fiber, ether extract, and ash, but contains a higher percentage of phosphorus than alfalfa growing in the same region.

Pieper *et al.* (*Illinois Station Bulletin* 416, 1935) report that lespedeza is valuable as a hay and pasture crop, possesses some acid tolerance and drought resistance, and is comparatively free from insect and disease pests. Because of its low seeding cost it has found a definite place in Illinois agriculture. The Korean variety appeared to be the most desirable annual type for Illinois. In northern Illinois, Harbin is the only variety expected to produce enough seed for self seeding. The perennial, *Lepedeza sericea*, showed considerable promise as a hay crop in the southern portion of the State. Well adapted lespedeza, in addition to its value for hay and pasture, comparing favorably with alfalfa, serves as a green manure and protects against soil erosion.

Brown and Munsell (*Conn. [Storrs] Station Bulletin* 208, 1936), report on species and varieties of grasses and legumes for pastures. The species which maintain good stands three years or longer either under cutting or grazing included Kentucky bluegrass, the bents, orchard grass, timothy, reed canary grass, and sheeps and chewings fescues, and Ladino clover and wild white clover in mixtures and Grimm alfalfa, alone. Perennial rye, meadow fescue, smooth brome, and tall oat grasses failed to maintain stands either alone or in mixtures. Lespedeza was not aggressive enough to maintain a stand on these soils. Animals tested preferred brome grass, timothy and meadow foxtail and avoided sheeps and chewings fescues.

In fertilization experiments with forage crops, McKee (*United States Department of Agriculture* 377, 1935) reported that seed of white lupine, crimson clover, hairy vetch, and Austrian field pea fertilized or started into growth by addition of moisture

and held for 40 days at 0°C came into flower and fruit when planted while untreated seed remained in the vegetative state or bloomed at a later date.

Stevenson and Clayton (*Canadian Journal of Research* 14:163-165, 1936) report progress in the breeding of coumarin-free sweet clover (*Melilotus*). Breeders have attempted to develop coumarin-free types of sweet clover as they are believed to be more palatable for hay and pasture purposes. The coumarin gives the sweet clover its bitter taste. It is believed by many that the coumarin and related compounds are associated with the toxic qualities of sweet clover. The authors have believed that it is possible to produce low coumarin varieties through inbreeding and selection.

WEED CONTROL BY CHEMICAL TREATMENT

Crafts (*Hilgardia California Station* 9: 437-457, 1935) in studies of the effectiveness of sodium chlorate as a herbicide to kill deep perennial weeds found that day-time spraying of 25 cc of 10% sodium chlorate solution on the foliage of greenhouse plants of morning glory, Russian knapweed, and hoary cress in blossom, with ample soil moisture, differed little in effect from simple removal of tops by cutting. Applying the same amount of chlorate to the soil killed the morning glory and Russian knapweed but only injured the hoary cress. Fall sprays applied by several methods to morning glory were all effective except a spray followed immediately by irrigation that washed the chlorate into the soil, leaving the foliage intact. Winter treatments were effective if the bulk of the chlorate was applied early enough to be leached into the soil. Late applications, however, failed. Hoeing the plants injured by chlorate absorbed from the soil weakened them and aided in the effectiveness of the treatment.

Extensive studies on soil sterilization by Crafts (*California Department of Agriculture Monthly Bulletin* 24, 1935) in work at the California

Experiment Station showed arsenic to be effective and practical for controlling weeds in waste areas. Dosages of two to eight pounds per square rod are needed according to soil type. The durability of a given application depends upon soil types, rainfall, weed seed population, disturbances of top soil, and contamination with the unfertilized soil. Sodium chlorate was effective against annuals for more than one year on heavy alluvial soils where rainfall is light and is valuable against deep-rooted perennials in most soils but the rate and time of application should be related to soil type and rainfall. Where dry application is desirable, the combination of sodium chlorate and dry arsenic trioxide applied in late winter has proved effective. The chlorate is effective against annuals during the following summer. By the second spring enough arsenic trioxide dissolves and is fixed in the soil to be effective, and the arsenic then continues to act as long as any remains in the soil. Crafts found the moisture to be especially valuable on gravel walks and drives and he cautions against poisoning valuable shrubs and trees with shallow roots beneath these areas.

In work at the University of Alberta, Bowser and Newton (*Canadian Journal of Research* 8:73-100, 1935) found sodium chlorate to remain toxic over about two years, depending mainly on the soil organic matter content and the amount of leaching. As soon as chlorate leaches from the soil or is reduced the soil returns to normal productiveness. Newton and Paul (*Canadian Journal of Research* 8; 101-114, 1935) found that ammonium thiocyanate applied in weed control to fallow and wheat plats in 1932 retarded nitrification and did not decompose or lose its toxicity completely during the season of application. Even with the heavy applications the toxic effect disappeared early in the following season. The growth of certain annual weeds was stimulated greatly by application of this chemical.

SAFFLOWER AS AN OIL BEARING SEED

Considerable interest has been shown in safflower, *Carthamus tinctorious*, an oil-bearing seed which has shown some promise as a dry land and irrigation crop for the northern great plains. Rabak (*United States Department of Agriculture Circular 366*, 1935) reports that safflower is well suited to the winter dry land farming in certain sections of the far western States as well as a dry land and irrigation crop for the northern great plains. The crop withstands spring frosts and drought and suffers less than small grain from wind and hail, does not lodge, shatter or discolor, is ideal for combining and has been relatively free from disease and insect pests. He reports that the seed can be crushed or extracted by usual methods of producing oil from oil-bearing seeds and that the oil is valuable for use in the paint, varnish and allied industries. Feeding tests with the press caked meal indicates its value as a feed for dairy cattle. Average yields have been 10 bushels per acre under dry farming conditions and 38 bushels per acre under irrigation.

FLAX FOR FIBER

Flax has been grown in America primarily for the production of its oil-bearing seed. Recently considerable progress has been made in the stimulation of the use of flax for its fiber. Robinson in *Oregon Station Circular 118*, 1936, reports upon the

development of the fiber flax industry in Oregon. In addition he gives complete directions concerning the methods of growing, curing and harvesting this type of flax.

MACHINE TESTS TO PREDICT DROUGHT RESISTANCE

Aamodt (*Canadian Journal of Research 12: 788-795*, 1935) reports on the development of a machine to test the resistance to plants to injury by atmospheric drought. He constructed a glass chamber through which he forced air heated by thermostatically controlled electric heaters. The object was to set up conditions similar to those encountered by plants in nature. Preliminary results indicated that the machine would be of considerable value in a breeding program in evaluating varieties as to their probable resistance under field conditions.

In further studies by Aamodt and Johnston (*Canadian Journal of Research 14: 122-152*, 1936) it was shown that wheat plants are most susceptible to drought injury at the shooting and the soft dough stage periods. Hardening of wheat plants by soil drought, or by limited exposures to atmospheric drought, increased their resistance to exposure of severe atmospheric drought. The drought resistant varieties, Milturum and Caesium, were found to possess a more highly branched primary root system than the non-resistant varieties, Marquis and Reward.

BOTANY

BOTANY

BY MILDRED E. MATHIAS

WRITER AND TEACHER

PLANT PHYSIOLOGY

Light and Radiation.—This subject has held its position as a foremost field of research by numerous investigators with papers on the influence of x-radiation upon development of roots and underground stems, leaf and stem structure, growth and respiration; the role of light in physiological processes, growth, differentiation, stem and leaf anatomy; the use of artificial light and reduction of the daylight period for flowering plants in greenhouses; photo-periodic responses of certain greenhouse annuals as influenced by intensity and wave-length of artificial light used to lengthen the daylight period; photosynthesis in relation to light, and leaf movements of *Mimosa pudica* in relation to light, intensity and wave-length of radiation. The subject of light and radiation has been comprehensively surveyed in two volumes edited by Duggar on the *Biological Effects of Radiation*, prepared under the auspices of the Committee on Radiation of the National Research Council. A brief survey of the field is the lecture of J. M. Arthur, "Light on Vegetation, 1910-1935," delivered at the twenty-fifth anniversary of the Brooklyn Botanic Garden.

Growth.—Important contributions in the field of growth studies have been made primarily in the researches on growth hormones. These include publications on the growth and respiration of *Avena*, plant tissue cultures from a hormone point of view, light growth response and auxin curvatures of *Avena*, the effects of auxin on the abscission of petioles, growth and phototropic response of oat seedlings, different action of auxin-a and of hetero-auxin, effect of growth substances on the rooting response of cuttings, the role of plant growth hormones in the production of intumescences on poplar leaves, auxins and the growth of roots, effect

of light and dark on responses of plants to growth substances, several esters as plant hormones, and the inhibiting effect of x-irradiation of auxin on plant growth. The English translation of Boysen Jensen's *Growth Hormones in Plants* gives a comprehensive survey of our knowledge in the field. Other papers on growth have been concerned with the effect of length of day and temperature, physiological changes, and water relations.

Other Studies.—There have been investigations on the polarization capacity and resistance of *Valonia*, the effects of current flow on bioelectric potential, maintained electrical polarities in the region of the axillary buds, breakdown of fruit and vegetable tissue due to an electric current, and electrical phenomena in large plant cells. Studies have been made of radiosensitivity, germination, mineral nutrients, respiration, metabolism, absorption, and transpiration, as well as on other phases of plant physiology. Of more general interest is Dr. True's survey of twenty-five years of plant physiology. Two recent bibliographies in the field are on the use of photoelectric cells in plant investigations and on the low temperature relations of plants.

MORPHOLOGY AND ANATOMY

Vascular Anatomy.—Investigations which contribute to the field of anatomy and also throw additional light on phylogenetic relationships include studies on the vascular anatomy of the Primulaceae, the papilionaceous Leguminosae, the Gramineae, and the Polemoniaceae. Papers have been published on the comparative anatomy of seeds in the Malvaceae, the carpel anatomy of the Berberidaceae, grass seedling anatomy, the vegetative anatomy of the tomato, the morphology and anatomy of *Lygodium japonicum*.

Wood Anatomy.—The distribution of albuminous and tracheary ray cells in the gymnosperms, lignification of xylem fibres in *Parkinsonia*, transitional pittings in tracheids of *Psilatum*, and the anatomical interrelationships of the Taxodiaceae have been subjects of study.

Embryogeny and Morphology.—The embryogeny of *Lilium longiflorum*, *Tolmiea Menziesii*, *Fagopyrum esculentum*, *Eugenia Hookeri* and *Fouquieria* has been reported upon. Leaf differentiation, seed development, regeneration, and life history studies have been carried on in various plant groups. Eames has published a new book on the morphology of the lower groups (*Psilophytales* to *Filicales*) of vascular plants.

TAXONOMY

Explorations and Collections.—Recent general collections of plants have been made by the Johns Hopkins seventh expedition to the West Indies and by Camp of the New York Botanical Garden in the southern Appalachians. Dodge recently returned from Puerto Rico with a large collection of lichens. A group from the New York Botanical Garden spent several months in the Rocky Mountain area collecting seeds of plants which may be used in horticulture. The Department of Agriculture has sent several expeditions into the field. In addition there have been numerous small and large collections made by various botanists throughout the country. The botanical results of the Grenfell-Forbes Northern Labrador Expedition of 1931 have been published.

Monographic and revisional studies have been presented on the genera *Arecastrum*, *Argyroxiphium*, *Azinaea*, *Butia*, *Carex*, *Delphinium*, *Dentaria*, *Eriogonum*, *Euphorbia*, *Gilia*, *Hydrocotyle*, *Lepidium*, *Lobelia*, *Malvastrum*, *Najas*, *Penstemon*, *Piper*, *Primula*, *Ranunculus*, *Sedella*, *Scleria*, *Smilax*, and *Viola*. Family and group studies concern the Violaceae, Nolanaceae, Mimosaceae, Caesalpiniaceae, and Apocynaceae. Several volumes of the *Flora of Peru* have been published by the Field Museum of Natural His-

tory. The Carnegie Institution of Washington has continued publication of the *Botany of the Maya Area*. Numerous workers have described new species and genera of various plants and added to our knowledge of little known species.

Lower Plants.—Publications on lower plants concern the Oedogoniales, several genera of Bryophytes, and the ferns.

Floras and Manuals.—Publications in this field include the *Plants of Yellowstone National Park*, the flora of the Watchung Mountains, New Jersey, an index of American palms, ferns of eastern North America, additions to the revised catalog of Ohio vascular plants, the forests and flora of British Honduras, Schaffner's *Field Manual of Trees*, a fourth edition of Muenscher's *Keys to Woody Plants*, a field book of Illinois wild flowers, handbook of northwest flowering plants, a catalog of the common forest trees of Minnesota and the lake States, and wild flowers of southern California.

Miscellaneous works of general interest include a continuation of Wodehouse's valuable studies on the use of pollen grains in the identification and classification of plants, a paper on the species problem in *Iris*, Schaffner's studies in determinate evolution, a bibliography of the botany of Arizona, and studies of the plant collections of Pursh and of Pringle. Merrill has presented a survey of systematic botany for the last twenty-five years.

MYCOLOGY AND PHYTOPATHOLOGY

Studies of Fungi.—Publications of general interest are Martin's key to the families of fungi and Krieger's *Mushroom Handbook*. Papers by Dodge on facultative and obligate heterothallism in Ascomycetes, Cummins on "Phylogenetic significance of the pores in urediospores," and Brodie on "The occurrence and function of oidia in the Hymenomycetes" are also of general interest. Seaver has continued publication of photographs and descriptions of cup fungi. Studies on the fungous flora of Nova

Scotia, papers on various families and groups, and life history and cultural studies have been the subjects of numerous papers. Systematic studies have been made of the genera *Helicogloea*, *Mycena*, *Underwoodia*, *Monilia* and *Polyporus*. In addition many new species have been described and notes published on the fungi of various local areas.

Virus Diseases.—Investigations on virus diseases have continued to hold their position of importance. Kunkel has surveyed the progress made in this field during the last twenty-five years. Viruses of potato, raspberry, pea, peach, and bean have been studied. The transmission of viruses by aphids has been proved for sugarcane and beans. Information on tobacco mosaic has been increased with studies on the resistance of the virus to monochromatic light, acquired immunity, serological tests, virus strains, and the chemistry of the virus proteins.

Papers on miscellaneous plant diseases include studies of rust fungi infecting spruce, oats, wheat and white pine; cotton root rot; the wasting disease of eel grass; brown root rot of tobacco; tree cankers; oat smuts; red rot disease of sugarcane; *Phytophthora* rot of sugar beets; powdery mildew; anthracnose of currant and gooseberry; *Sclerotinia* rot of squash and pumpkin; loose smut of barley; fire blight of apple trees; cranberry fruit rots, and black rot of tomato. Fawcett has published a second edition of *Citrus Diseases and Their Control*.

GENETICS AND CYTOLOGY

The genus *Tradescantia* has been the subject of study by numerous workers with papers concerning fragmentation, chromosome structure, x-ray induced rearrangements, and hybridization. Anderson and Sax have published a cytological monograph of the American species of this genus.

Concerning the genus *Neurospora* there have been papers on interspecific hybrids involving factors for ascus abortion, heterokaryosis and hormones, the structure of the sex

chromosome and sex-reaction linkage.

Cytological and genetical investigations have included studies of the genera *Agrostis*, *Ambrosia*, *Apocynum*, *Capsella*, *Citrullus*, *Datura*, *Lilium*, *Lythrum*, *Nasturtium*, *Oenothera*, *Sedum*, *Solidago*, *Sphaerocarpos*, *Trilium*, *Vicia*, *Viola*, and *Yucca*. Research has been continued on the genetics of corn, apples, barley, wheat, oats, beets, potato, various cucurbits, sorghum, and rye.

Moyer has continued his studies on electrophoresis of latex with a publication on "Chromosome numbers and electrophoresis of latex in *Asclepias*," finding that species relationships are shown by the electrophoretic curves and isoelectric points of latex particles. Flory has discussed chromosome numbers and phylogeny in the gymnosperms.

Other papers of general interest concern a theory for the physiology of development and genetics, the theory of multiple-strand crossing-over, a new theory for explaining heterosis, polyploidy, and the series on the species problem presented at a joint symposium of the American Society of Zoologists and the American Genetics Society. Allen and Blakeslee, respectively, have surveyed the last twenty-five years of cytology and genetics. Books of note are Seifriz, *Protoplasm*, and Shull, *Evolution*.

ECOLOGY AND PLANT GEOGRAPHY

Studies of restricted areas from an ecological or geographical viewpoint include those on tussock meadows in southeastern Wisconsin, the lower Illinois River Valley, plant distribution in the Hudson River Estuary, phytogeographic studies in the Athabaska-Great Slave Lake region, a preliminary vegetation map of Indiana, an oak woods at Cold Spring Harbor, Long Island, the crescentic dunes of the Salton Sea and their relation to vegetation, the vegetation of the Katmai District, age-size relationships in a virgin forest in Pennsylvania and a comparison of two virgin forests in that State, the coastal dune plants of southern

California, a climax forest community in northeastern Pennsylvania, the early vegetation of Long Island, a glacial lake in central Colorado, pollen analysis of a bog in Illinois, a study of growth, transpiration and distribution of the conifers of the Rocky Mountain National Park, the Great Smoky Mountains region, the forests of southwestern Ohio, the big woods of Minnesota, and the plant life of the Sonoran Desert.

Investigations have been made of the relation of hydrogen ion concentration to the growth and distribution of mosses, soil acidity in relation to Pteridophytes, the ecology of a lawn, factors influencing the rate of growth of pine, viability and germination of seeds and early life history of prairie plants, moisture relations in chaparral, the composition and dynamics of a beech-maple climax community, and the root systems of woody plants.

Soil erosion studies concern the tendencies in natural revegetation of wind erosion areas on the northern Great Plains, erosion control grasses of the corn belt, erosion silt as a factor in aquatic environments, and the relative efficiency of roots of plants in protecting the soil from erosion. Two books in this field are Ayres, *Soil Erosion and its Control*, and Burges, *Soil Erosion Control*. Weir's *Soil Science—its Principles and Practice* also discusses erosion problems.

Papers of general interest are Gleason's survey of twenty-five years of ecology, discussions of synusia, and Ashby's paper on statistical ecology.

MISCELLANEOUS PUBLICATIONS

Palaeobotanical papers include studies on a cretaceous fungus, fossil studies of the Two Creek Forest Bed in Wisconsin, miocene plants from Colombia, new species from various horizons, and two general discussions, one by Wieland on twenty-five years of palaeobotany, the other by Thomas on palaeobotany and the origin of angiosperms.

The teacher of botany will be interested in Robbins and Isenbarger, *Practical Problems in Botany*, Hill,

Overholts and Popp, *Botany, a Text-book for Colleges*, and a third edition of Conn's *Biological Stains*. Of general interest are a second edition of Clute's *Dictionary of American Plant Names*, *Essays in Geobotany*, edited by Goodspeed, Peattie's *Green Laurels*, an account of the lives and achievements of the great naturalists, Stuart Chase, *Rich Land, Poor Land*, a study of waste in the natural resources of America, and the 1936 *Year Book of Agriculture*, concerned primarily with plant and animal breeding.

Publications in the field of horticulture include Taylor's *Garden Dictionary*, Seymour, *The Garden Encyclopedia*, Bower, *Rhododendron and Azaleas*, Salisbury, *The Living Garden*, Laurie and Chadwick, *Commercial Flower Forcing*, and papers on plant patents and roadside plantings. Whitehouse has surveyed twenty-five years of horticultural progress with special reference to foreign plant introduction.

BOTANICAL SOCIETIES

The annual meeting of the American Association for the Advancement of Science, including the Botanical Section and its affiliated societies, was held in St. Louis during the Christmas holidays, 1935. The summer meetings, 1936, of the Association were held at Rochester and Ithaca, New York, and, in conjunction with the Pacific Division, in Seattle, Wash.

The Botanical Society of America had two summer meetings, one at New London, Conn., the other at the University of Wyoming Summer Camp in the Medicine Bow Mountains. These meetings were informal, an important feature being field trips to points of interest.

The American Society of Plant Physiologists held a spring meeting at New London, Connecticut, and summer meetings with the American Association for the Advancement of Science at Rochester and Seattle.

The Mycological Society of America conducted its annual summer foray at Mountain Lake, Virginia.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

The American Society of Plant Taxonomists, initiated at St. Louis during the Christmas meeting, completed its organization with about 200 charter members.

The Southern Appalachian Botanical Club, recently organized with headquarters at the University of West Virginia, started the publication of a monthly journal.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Logan Square, Philadelphia, Pa.

AMERICAN ASSN. OF ECONOMIC ENTOMOLOGISTS, Amherst, Mass.

AMERICAN ASSN. OF MUSEUMS, Smithsonian Institution, Washington, D. C.

AMERICAN MICROSCOPICAL SOCIETY, Kansas State Agricultural College, Manhattan, Kan.

AMERICAN MUSEUM OF NATURAL HISTORY, 77th St. and Central Park W., New York City.

AMERICAN NATURE ASSN., 1214 Sixteenth St., Washington, D. C.

AMERICAN NATURE STUDY SOCIETY, 5540 Pershing Ave., St. Louis, Mo.

AMERICAN ORNITHOLOGISTS' UNION, 1939 Biltmore St., N. W., Washington, D. C.

AMERICAN PHYTOPATHOLOGICAL SOCIETY, Bureau of Plant Industry, Washington, D. C.

AMERICAN SOCIETY OF NATURALISTS, Brown University, Providence, R. I.

AMERICAN SOCIETY OF ZOOLOGISTS, 25 Wesleyan Place, Middletown, Conn.

BOSTON SOCIETY OF NATURAL HIS-

TORY, 234 Berkeley St., Boston, Mass.

BOTANICAL SOCIETY OF AMERICA, Cornell University, Ithaca, N. Y.

ENTOMOLOGICAL SOCIETY OF AMERICA, (Clarence H. Kennedy, Editor), Columbus, O.

EUGENICS RESEARCH ASSOCIATION, Cold Spring Harbor, New York.

FIELD MUSEUM OF NATURAL HISTORY, Roosevelt Road and Lake Michigan, Chicago, Ill.

MUSEUM OF THE COMPARATIVE ZOOLOGY, Cambridge, Mass.

NATIONAL ASSN. OF AUDUBON SOCIETIES, 1775 Broadway, New York City.

NEW YORK MICROSCOPICAL SOCIETY, American Museum of Natural History, New York City.

NEW YORK ZOOLOGICAL SOCIETY, 101 Park Ave., New York City.

PALEONTOLOGICAL SOCIETY OF AMERICA, American Museum of Natural History, New York City.

REPTILE STUDY SOCIETY OF AMERICA, Inc., 536 East 84th St., New York City.

UNITED STATES NATIONAL MUSEUM, Tenth and Constitution Ave., Washington, D. C.

DIVISION XXIII

MEDICAL SCIENCES

MEDICINE, PHYSIOLOGY, AND PATHOLOGY

BY MAX TRUBEK

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GENERAL

During 1936 a number of important methods of treatment previously advocated have been given the trial of widespread clinical application. Some new or improved procedures also have been introduced and presented to the profession for use in the clinic and in practice. In addition, facts concerning subjects of special importance in the field of preventive medicine and public health have been emphasized and brought into more conspicuous focus.

SURGERY IN HYPERTENSION

The diagnosis of the condition known as essential hypertension applies to a patient who has sustained blood pressure levels well above the limits of normal systolic and diastolic pressure and in whom there exists none of the conditions known to cause elevation of tension. The latter would include among others, chronic Bright's disease, hyperthyroid state, coarctation of the aorta, toxemia of pregnancy, and adrenal tumors. The condition often occurs in persons of great emotional instability but this is not a necessary concomitant. The cause is unknown. Constitutional and hereditary predisposition is not uncommonly encountered.

Broad clinical experience has taught individual medical men a great deal about the nature of high blood pressure. They know its inconsistencies and vagaries, its relatively benign course in many instances. It may

exist for a great many years and not give rise to any subjective symptoms. It may appear as a transitory phenomenon and not reappear. A disturbingly high elevation of pressure may be interrupted by an episode of coronary occlusion with subsequent reestablishment of a much lower blood pressure level and with relief of headache or other previously annoying complaints. In some patients the affliction is unrelieved and its progress inexorable toward widespread disease of the smaller blood vessels and eventually premature death is a result of either heart failure, cerebral hemorrhage or kidney failure.

The continued elevation of blood pressure is known to give rise to disease of the smaller arteries (arterioles) characterized by thickening of the middle layer of the vessels. It has been assumed by some, but doubted by recent careful investigators, that a phase of arteriolar spasm precedes the stage when such thickening occurs. Experience had discounted the theory that perhaps the elevation of pressure was serving as a compensatory mechanism; indeed, there was improvement in well being with relief from the elevated pressure by any of the causes previously enumerated. Methods were sought whereby to relieve the state of supposed arteriolar spasm in these patients with persistently elevated blood pressure whose condition could not be improved by ordinary medical measures. Knowledge had been

gained from the treatment of certain local vascular disturbances where arterial spasm was known to exist and which appeared to be relieved after destroying their sympathetic nerve supply. Stimulation of this latter mechanism is known to cause vascular spasm; its disseminated effect, maintained by causes unknown, might presumably underlie the disorder in question.

During the past two decades Dr. George Crile of Cleveland has been working on methods to interrupt the adrenal sympathetic nervous system. He believed, at first, that an excessive secretion of adrenalin was the underlying cause of the disorder and attempted in various ways to check its production. His work recently sent him big-game hunting to Africa where he could observe and compare the energy systems of wild animals. Between the hyper-energetic lion and the lethargic alligator he found considerable differences in the size and complexity of their adrenal sympathetic system of a nature to confirm his belief as to the function of that mechanism. His earliest operation on the human being was a unilateral adrenalectomy; his latest procedure for the attempted cure of essential hypertension consists in bilateral excision of the celiac ganglia and denervation of the aortic plexus.

Dr. Alfred Adson at the Mayo Clinic has for a long time been interested in surgery of the sympathetic nervous system for a variety of conditions and has applied a method for the attempted improvement of this distressing condition. He has avoided operating on those patients in whom there already have resulted evidences of irreparable damage to the heart or kidneys. He has selected those patients for operative interference who are under forty and do not reveal evidence of significant structural alteration but in whom the continued presence of high blood pressure is a source of minor symptoms aside from the factor of anxiety. The operation of rhizotomy as first proposed and used also by Drs. Page and Heuer of New York is an extensive and formidable task. An at-

tempt is made to benefit the state of systemic arteriolar spasm by relaxation of the large abdominal vascular bed. The sympathetic nerve fibers for this area leave the spinal cord by way of the anterior nerve roots between the sixth thoracic and second lumbar vertebrae. The spinal cord must be exposed by removing its bony covering; thereafter the anterior nerve roots, carrying both motor and sympathetic fibers, are severed on both sides. In addition to relaxing the "splanchnic" vascular bed, the abdominal and thoracic muscles become paralyzed. To simplify the procedure and still obtain comparable results, Dr. Adson sections the splanchnic nerves which carry sympathetic fibers to the abdominal vessels, also removing the first and second lumbar ganglia with their intervening trunks. They have been sufficiently enthusiastic in their published end results to excite the interest of many doctors entrusted with the care of patients suffering from essential hypertension which in itself is not ordinarily considered to be a condition which calls for drastic action. As Dr. John Morton of Rochester, N. Y. has remarked, interest centers in the publication of late or ultimate results, not of immediate or transitory benefits.

The most optimistic reports are those which come from the clinic of Dr. Peet in Ann Arbor, Mich. His procedure is also a simplified one—removing the splanchnic nerves and the tenth, eleventh and twelfth dorsal ganglia on both sides. Only patients with evidence of very serious kidney damage are withheld from this surgical measure. Whether the amelioration of the elevated tension and an apparent cessation of evidences of progressive vascular disease are transitory or lasting, only continued observation of these same patients can tell. There is no doubt that these pioneers have called attention to remedial measures in a field of illnesses some of whose victims had been helplessly set aside to chance. Their methods of attack may be paving the way for simpler and safer procedures whose indications

become better identified and whose good results, perhaps, are more certain.

PROTAMINE INSULATE

A contribution of exceeding importance to the treatment of diabetes has appeared from the laboratory of Professor H. C. Hagedorn in Copenhagen, Denmark. In the normal human mechanism the islets of the pancreas manufacture insulin which is supplied into the blood stream as a continuous secretion. Insulin obtained from the pancreas of animals by the discovery of Banting has been used by injection to replace a deficiency in diabetic patients. Such abrupt replacements in relatively large amounts do not parallel nature's method of gradual release of this substance in healthy individuals. It has been known that in severe diabetes there occur wide fluctuations of the blood sugar level during the intervals between insulin injections. A method was sought to retard the rate of absorption of injected insulin and more closely to imitate nature's process.

Dr. Hagedorn and his associates succeeded finally in combining the usual insulin hydrochloride with a protamine derived from the sperm of a species of trout. This compound has its point of minimum solubility at an acid-base reaction similar to that of tissue fluids. After subcutaneous injection of protamine and insulin, which unite as a turbid suspension, the resultant compound is slowly broken down and the active insulin slowly released so that the original quantity is only gradually discharged so as to exert its beneficent effect in the patient with diabetes over a prolonged period.

As originally used during the early clinical trials, protamine contained in a buffered solution was added to regular insulin just preceding actual injection. Thus, two solutions were involved and had to be supplied relatively fresh to prevent deterioration. This disadvantage was of considerable importance to patients administering their own insulin at home. The immediate success of this substance in obtaining the desired results stimu-

lated investigation for even further improvements, particularly in stability so as to provide a single solution, already mixed and ready for use. The experiences of Professor Hagedorn were confirmed where his material was distributed to such outstanding clinics as those of Joslin and the Mayos in this country, and Rabinowitch in Canada.

It must be remembered that dietetic management is still the backbone to treatment in diabetes mellitus. The advent of insulin in 1922 made it possible for the diabetic patient to advance from the status of painful starvation to one of normal nutrition. Experience with the new insulin has already taught clinicians that there can be no lapse from the dietary regulations. Two great objectives can be attained, which were previously not possible: the improved regulation of the blood sugar curves in severe diabetes and a reduction in the number of injections of insulin. This latter goal is the wish of all patients, and for diabetic children, particularly, it offers a new vista of happiness. At times better regulation has been attained with one injection of protamine insulin and one injection of ordinary insulin in 24 hours than with four previous daily injections of old insulin. Occasionally the use of one injection of protamine insulin properly timed will suffice for excellent control.

Perhaps the final improvement has not yet been made. The latest product of greatest stability has been produced by the Eli Lilly Company working in cooperation with the Toronto Insulin Committee and Professor Hagedorn. It has been prepared by "mixing insulin containing protamine and zinc with a buffered solution in such a manner that each cubic centimeter, as supplied, contains 40 units of insulin and approximately 0.08 mg. of zinc in combination with protamine in a precipitated form." The zinc is seemingly non-toxic even for continuous administration. This combination has replaced in usefulness such previously

utilized preparations as the separate mixture of insulin and protamine or calcium and protamine insulin or the relatively insoluble crystalline insulin which also has a slow absorption rate, intermediate between ordinary insulin and the new protamine insulines.

Old insulin still has its field of usefulness. Mild diabetics requiring one injection daily may so continue; acute infections demanding abrupt increments are still within its field for application and its use preceding surgical measures or in diabetic coma cannot be replaced by the more slowly absorbed substance. The use of the new insulin requires more accurate medical supervision. With the slow absorption rate depression of the blood sugar is spread over a long period, the effect may last between 24 and 72 hours. Thus cumulative effects upon the blood sugar do result if successive doses are more than needed. The patient may, therefore, enter insidiously into a profound hypoglycemic status which might be at first overlooked since there is lacking the dramatic episode of hypoglycemic shock after an excessive dose of ordinary insulin. As a rule the periods of subjective distress from low blood sugar levels have been less severe in those patients properly controlled with the new replacing their old insulin.

A valuable improvement has been added to the armamentarium of the physician for the treatment of diabetes mellitus. Its use must, however, be carefully guided. Since its action is slower the time relation between injection and subsequent meals is quite different than with the old substance. Blood sugar values must be more frequently followed until the patient is well regulated. Its combined use with old insulin will be required in many instances. Inaccuracies of administration will condemn it because of greater inherent dangers but the demonstrated superiority in many cases where properly administered is convincing evidence of its great usefulness.

INDUSTRIAL AND OCCUPATIONAL CANCER

Increasing evidence has accumulated regarding the direct relationship between exposure in certain industries and the occurrence of cancer in characteristic locations. Preventive measures can be applied to minimize contact with carcinogenic substances or physical agents and a definite number of individuals safeguarded against the occurrence of malignant growths. Dr. William J. Hoffman has recently coordinated knowledge of these factors and from his review our present-day concepts can be summarized.

The oldest and best known correlation between industry and cancer concerns the pulmonary disease which for years has been a cause of many deaths among the miners in Joachimsthal and Schneeberg, Germany. Only in recent years has this hitherto mysterious malady been identified as cancer of the lung. The miners themselves knew that increased mortality among them followed each discovery of a rich uranium vein. With the discovery of radium from this source the mining operations were greatly expanded. "The evidence," states the Hoffman report of the Academy of Medicine, "is almost overwhelming that the cause of the cancer is the inhalation of radium emanation. The most practical suggestion, for the prevention of this occupational hazard, would seem to be that the miners wear respirators containing animal charcoal, a substance which almost completely absorbs radium emanation."

The direct relationship between the absorption and deposition of radioactive material in the human body and the subsequent development of cancer has been shown by Dr. Harrison Martland and his co-workers. In 1925 he reported upon "some unrecognized dangers in the use and handling of radio-active substances" among the girls occupied in painting the luminous dials upon watches. The radio-active material used consisted of crystalline phosphorescent zinc sulphide, rendered luminous by the addition of small amounts of radium, mesothorium and radio-

thorium, in the form of insoluble sulphate in the paint. These girls formed the habit of "pointing" the paint brushes between their lips, thus steadily ingesting small amounts of this material. Small quantities were absorbed from the intestinal tract and stored within the organs containing the reticulo-endothelial system, particularly in the bones. The early deaths, between five and ten years after exposure, were due chiefly to the destructive action upon the blood forming elements of the bone marrow due to the continuous bombardment by the alpha and gamma rays given off by the radium deposits in the contiguous portions of the bones. Many of the patients presented themselves with a profound anemia often with sepsis and at times with destruction of the jaw bone due to necrosis secondary to the radium deposition. Chemical analysis of the bodies of those who died from this form of radium poisoning showed the presence of from 10 to 180 micrograms of radium, almost entirely concentrated in the bones.

Those patients who survived the intensive onslaught upon their bone marrow permitted time to diminish the activity of the mesothorium by its natural decay. Within 6.7 years this substance gives up 50 per cent of its radio-activity. A high percentage of these "late" cases appeared with crippling bone lesions due to radiation osteitis from which in many instances there developed extensive osteogenic sarcomas. It is evident that protection of the workers requires strict medical supervision of the use of radium in industry.

There is a known high incidence of cancer of the bladder among workers employed in the manufacture of aniline dyes. The causative factor of such exposure in this affliction was proven in Germany in 1912. In this country the industry, being relatively new, did not present any such cases until 1931. The carcinogenic agent appears to be anilin, beta naphthylamine and possibly benzidine which may enter the bodies of the workers during the process of manufacture either by inhalation, ingestion or by

continued rubbing into the skin. Under these conditions the worker must be rigidly protected against dust, fumes or chemical contact with the skin while employed in such a plant.

Percival Pott, in 1775, was the first to associate the occurrence of cancer with a coal tar product. He showed that soot was the agent responsible for carcinoma of the scrotum among chimney sweeps in England. Cancers of the skin are known to occur among workers continuously exposed to tar, creosote, anthracene, soot, shale oil and petroleum. Oils from different sources are not equally carcinogenic and this depends upon their content of certain aromatic hydrocarbons whose molecular structure is closely related to a fundamental chemical pattern of which 1:2 benzantracene is typical. There is a close molecular and chemical relationship between these carcinogenic hydrocarbons and the hormones and bile acids of the body and of the vitamins. That certain human cancers may be caused by the perverted function of one of these substances is being actively investigated. Protective measures can always be installed to safeguard workers from undue contact with these potentially dangerous substances previously enumerated.

Arsenic has long been known to present certain dangers of an occupational nature. Long continued ingestion or inhalation of this element presents an etiological relationship to the cutaneous keratoses, warts and epitheliomas appearing many years after initial exposure. The same hazard is present from long continued administration of arsenic containing solutions by mouth, particularly Fowler's solution.

Prolonged exposure of the skin in the white race to sunlight may occasionally be followed by pathologic changes leading in some cases to the development of cancer. Roentgen ray carcinoma may appear in the skin of the unprotected Roentgenologist or in technicians needlessly exposed without proper screening to the x-rays. The site of old chronic wounds and particularly the region

of old burn scars not infrequently become the site of origin of cancer of the skin. For this reason every care must be given in the treatment of chronic skin infections or of burns to encourage rapid epithelialization or to institute early skin grafting of the burned area.

The question of injury as a cause for the subsequent development of cancer has assumed a controversial aspect because of its important legal relation to industrial accidents. Trauma may accentuate the growth of a previously existing tumor or it may establish a more favorable locus for the deposition of malignant cells cast into the blood or lymph channels from a distant primary neoplasm. Certain criteria must be satisfied, in any event, if a traumatic episode is even to be considered as an etiological factor in a given case of malignancy. The injury must have been adequate and definite, the wounded part must have been previously normal, the tumor must arise at the point of injury, and reasonable time limit must be observed between injury and the appearance of the tumor. Lastly the tumor must present on microscopical examination characteristics which would reasonably be in accord with spontaneous origin at the place of injury and not show structural elements suggesting either origin within another organ or reveal features of growth known to be due to other causes such as development from embryonal rests.

Each succeeding year sees the etiology of malignancies better defined and better understood. In many instances causal relationship can be established and unnecessary exposure avoided. The most fertile field of investigation now seems to lie within the study of precisely known carcinogenic agents and their close chemical relationship to certain substances normally existing in the human body and in nature.

SYPHILIS CONTROL PROGRAM

Syphilis is a rapidly spreading and widely prevalent disease in this country. The specific cause of this infection is known, its modes of

transmission are common knowledge, early and exact diagnosis is possible and therapeutic agents exist for quickly rendering an infected person non-contagious. It would seem a simple matter to apply this knowledge universally, yet this is not the case.

When one is confronted with the problem of treating the late manifestations of this disease there is always the realization that we are battling at the wrong end. In dealing with an affliction whose end results are often so disastrous our efforts and ingenuity for its elimination must be combined just as has been accomplished in the eradication of bubonic plague. There is no squeamishness in the plea of the innocently infected bride or mother of later years who wants to know what is being done to protect others. In the Scandinavian countries it has become almost a rare disease because of vigorous public health measures; in Great Britain the recorded prevalence has been reduced one-half since 1920.

In Scandinavian law and practice the control of venereal disease is a public responsibility, the cost of which is borne generally by the central government. The health officers are notified of all cases and the requirement that all infected persons take treatment are the chief factors in control. In Great Britain no legal control over the patient is exercised, entire dependence being placed upon free clinic treatment for all. Significant success has attended the Swedish requirement that all sources of infection be ascertained and brought under treatment.

The examples of Scandinavia and Great Britain are not entirely comparable to the problem presented in this country. They more nearly resemble metropolitan areas of our larger cities or stable population units, compact and homogeneous such as are found in certain sections of the United States. To quote Dr. John H. Stokes in this respect: "The everyday doctor's cooperation is essential. I would emphasize to health officers from such perspective as I

have in the field, first, that they cannot in a country such as ours, from the standpoint of tradition, of geography or of population distribution, dispense with the active and constant cooperation of the everyday doctor both in diagnosis and treatment; no mechanism of state owned or subsidized clinics, no machine tactics, no pushing aside, no effort to fence about and till the venereal disease field as an organizationally controlled public health problem will be wholly effective. . . . Do not believe that a fiat establishing a few hundred or a few thousand clinics by executive manifesto in this country is all that is needed to stamp out syphilis and gonorrhea and their minor associates." Like the street cleaning department of a large city, the organization and mechanical equipment may be ideal and modernized each year but the streets remain littered without the active cooperation of the citizenry combined with the intelligent interest of all individuals assigned to the task.

The officers of the United States Surgeon General and Public Health service are actively engaged in the elucidation of this major problem. Dr. R. A. Vonderlehr, Assistant Surgeon General, believes that "one of the chief reasons why greater success has not been attained in bringing syphilis under control is its unfortunate association with morality. Health officers must take the lead in teaching the public to regard syphilis as a disease and not as a form of moral delinquency. The disease, like many others, is communicable and should be so considered by the health officer at all times." Serious consideration will have to be given to a plan for civilian education in the control of syphilis. Medical education will see to it that the newer graduates are better minded and more thoroughly trained for their part in the coming campaign. Opportunities will be established for some of the older men to familiarize

themselves with the more recent advances. The attitude of aloofness or secrecy surrounding the handling of even private patients so infected will be replaced by the sense of duty by all concerned to ascertain the identity of the person from whom the patient acquired the disease and the identity of other persons exposed to the same source or to the patient following infection. Adequate and complete treatment will be much more generally carried out, regardless of the financial ability of the individual concerned. Free treatment in more easily accessible clinics, manned by doctors especially trained, will be made more generally available. When the ability to pay is limited, the necessary drugs will be supplied gratis to private doctors requesting such a need. Consultation service will be at the command of the private physician to lend immediate advice for a difficult problem arising in the course of treatment or complication of the illness or from its epidemiological relationships.

The prevention of prenatal syphilis is fundamentally almost as important as the prevention of transmission of early acquired syphilis. A normal child free from disease, in contrast to one with congenital syphilis, can be expected after adequate treatment of the child-bearing patient. This regime will receive more nearly universal application than is at present available. Reliable blood tests for syphilis will be performed on all patients. Effective means for dissemination of knowledge regarding the disease will be found. Advertisements and displays concerning the treatment of various body ailments are tolerated complacently by our present day civilization. Perhaps this current brazenness will have its compensation in breaking our reserve toward this hitherto unspeakable topic. Our citizenry will be immeasurably benefited.

SURGERY

SURGERY

By FRANK L. MELENEY

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SURGICAL PROGRESS

It is necessary to be conservative in the evaluation of any new scientific discovery, and the span of a year is often too short a time in which to measure its value. It must be carefully checked up not only by the originator but by others who will be critical of every phase of the work. It must be tested in the laboratory and in practice, and it often requires five or even ten years before its real value can be finally determined. In certain general fields of surgery, however, the year 1936 has apparently shown some progress, namely, in anesthesia, and in minimizing the other risks of operation, in the surgery of the ductless glands, in the study of cancer and in surgical infections.

ANESTHESIA

Avertin.—Avertin continues to give satisfaction as a basal anesthetic. The apprehension experienced by the patient and the uncomfortable sensations experienced during the induction of an inhalent anesthetic are completely gone. Patients who have gently dropped off to sleep under the influence of this drug are uniformly grateful for the symptomless onset of anesthesia. The use of local anesthesia with avertin has steadily increased, but the majority of cases require some inhalation anesthetic in order to produce the complete relaxation necessary for intra-abdominal operations. These supplementary anesthetics, however, may be reduced to a minimal quantity if they have been preceded by avertin. This drug also is finding increasing usefulness in the control of the convulsions of tetanus.

Spinal Anesthesia.—The indications for spinal anesthesia are gradually becoming more and more clearly demonstrated and its limitations and dangers better understood. Spinal anesthesia should only be given by one who thoroughly understands its

dangers and limitations. The patient must be watched carefully for any untoward symptoms, particularly for the first half hour after its administration, because it is during that time that it may become diffused and its action may spread to dangerous zones. This may be controlled by determining the relative specific gravity of the spinal fluid and the anesthetic solution. They should be approximately equal, but if they are unequal the level of action may be raised or lowered by changing the position of the patient on the table. Care should be taken not to produce the anesthetic level much above the level of the operative field. In order to avoid the dangers of depression of the respiratory center many operators limit the use of this anesthetic to operations below the diaphragm. Aside from the depressing effect upon the centers in the upper cord the most important danger is the fall in blood pressure, the exact cause of which has not been definitely determined. This may be avoided in most cases by the preliminary administration of ephedrine; but at any time during the operation, either early or late, the blood pressure may fall and, if it is not restored by ephedrine, the intravenous administration of saline or glucose or gumacacia or even transfusion may be necessary to bring it back to a safe level. A number of anesthetic agents are still being used by different operators but novocain for short operations and pantocaine for long operations seem to be the anesthetics of choice. Pantocaine may be administered in a medium considerably heavier than the spinal fluid and thus the point of its action may be definitely limited to one or two segments of the cord or even to one side of the cord. This is particularly advantageous in operations on one of the lower extremities. Spinal anesthesia is particularly indicated in intestinal obstruction or in any other

condition where the contraction of the gut will facilitate the operation, but its dangers must be constantly kept in mind and every precaution taken to minimize the risk.

Cyclopropane.—The use of this gas is gradually becoming more extensive. It is frequently employed with avertin and, although its margin of safety is less than with ether or nitrous oxide, the quick induction and the quick release from the effect of cyclopropane offer compensation for this fault. Another compensation is the maintenance of anesthesia with a very high percentage of oxygen as a diluent, for the mixture of these gases permits deep anesthesia without the danger of anoxemia.

Evipan.—Evipan is becoming much more widely used for short anesthetics and, if given by one who is experienced with its administration, it has been found to be eminently safe. A few accidental deaths have been reported when it was not so given, but it has been used in thousands of cases safely and effectively. It is administered intravenously and must be given very slowly. The patient himself indicating by counting when it has taken effect and by his movements when he is returning to consciousness. If it is given in diluted form this can be nicely controlled by slowly initiating the anesthetic and carrying it along with slow additions according to the indications. Its use is usually limited to anesthetics of short duration, but in a number of cases it has been used for longer procedures. It may also be given as a rectal anesthetic, but its absorption is not certain enough to make this procedure perfectly safe at the present time.

Preliminary Narcotics.—The induction of anesthesia of all kinds is favored by the preliminary administration of various drugs. Morphine has been used for many years but its place is frequently taken now by one of the barbiturates. Many of these are synthetic drugs which are prepared by various pharmaceutical houses and the composition is frequently changed in an effort to increase certain of the favorable fea-

tures and decrease certain of the unfavorable features of drugs previously employed. For this reason preparations are often put out on the market and are being recommended without extensive experimental background. The multiplicity of these preparations would seem to indicate that the ideal one has not been found. There seems to be a considerable degree of idiosyncrasy to the barbiturates, particularly on the part of female patients. Unfavorable reactions often occur also in old people so that these drugs should be administered cautiously. The most frequently used are amytal, sodium amytal, mambutal and phenobarbital.

MINIMIZING THE RISKS OF OPERATION

Steady progress is being made in this field of surgery. This includes not only the careful selection of an anesthetic but also the pre-operative determination of the various functions of the body which are apt to be disturbed by the anesthetic and the operative procedure. For example, success in thoracic surgery depends to a large extent on the operator's knowledge of the physiology of respiration and cardiac action with regard to the circulation of the blood both through the lungs and through the general arterial system. Careful studies were made during 1936 of the exchange of oxygen and carbon dioxide in the lungs, and the profound changes which take place in the organism from abrupt or extensive variations from the normal. Careful ante-operative studies have been made of liver function in gall bladder disease and the dangers which result from the overloading of the liver, the heart and other organs with fat. The profound alterations of the electrolytes in the blood as the result of prolonged starvation from gastric or intestinal obstructions or prolonged vomiting have been studied. The loss of water both obvious and insensible during operations and in the immediate post-operative period has been given special attention. Vitamins have been growing in importance in connection with surgical diseases of the gastro-

intestinal tract and their function in wound healing is gradually being better understood. With such knowledge ways and means have been devised to adjust these abnormal conditions before operation if possible and with the utmost speed after the operative procedure.

CANCER

The chief progress in the control of cancer has been in the field of popular education. With the marked fall in the number of deaths from infectious diseases, especially among children and young adults, the average age of the population is steadily increasing, bringing more and more people into the cancer age group. The problem of cancer, therefore, has become increasingly important to the public at large. Cancer begins so insidiously that even when it appears on the external parts it is frequently not observed by the patient and when it occurs inwardly it frequently gives no symptoms until it has become well advanced. The aim of the popular educational movement has been to inform patients about the early symptoms and signs of cancer and they are responding to the appeal. A study has been made by a number of observers of the reason for delay in seeking medical attention for obvious tumors. The most common reason given is that, as long as there was no pain, the patient thought that the lump could not be cancer. Many patients have tried all kinds of home remedies, thinking that the abnormal condition would disappear, and fears have been allayed by well-meaning friends who did not realize the significance of such abnormalities. It has been demonstrated beyond question that cancer is curable in direct proportion to the promptness of the operative procedure after the first signs or symptoms of the disease appear. The present mortality will fall if this educational program will bring patients to the doctor for early treatment with increasing alacrity.

In the very latest stages of cancer, however, there is frequently incapacitating and unbearable pain which cannot be controlled by heavy doses

of morphine. These patients may be relieved, however, by blocking the nerves of pain either by the injection of alcohol into the spinal canal or by the operation of chordotomy. During the past year the simpler method has been used with increasing frequency and success. Alcohol injected into the spinal canal, being lighter than the spinal fluid, floats to the upper surface so that when the patient lies on the opposite side, the action of the alcohol upon the proper tracts in the cord will have its maximum effect in the relief of pain without disturbing the other functions of the cord. The same results may be obtained with greater accuracy and with more permanent effect by an operative procedure in which the cord is exposed and the tracts which carry the sensation of pain are cut.

SURGERY OF THE DUCTLESS GLANDS

Thyroid.—The wave of popularity for the total removal of the thyroid gland for incapacitating heart disease has receded somewhat during the past year. The brilliant results which have been reported in some clinics have not been attained with such frequency in other places, and it seems probable that there will have to be a more careful selection of the cases suitable for such a procedure. Entirely aside from the operative mortality, which is high, in many cases there has not only been no improvement in cardiac function but distress from the lack of thyroid or the interference of parathyroid secretion.

Parathyroid and Pancreas.—Continued interest is being shown in the rather bizarre symptoms resulting from the over-action of parathyroid tissue from the presence of adenomas. The condition of hyper-parathyroidism is being more frequently observed and favorable results of operation are being obtained. Similar recognition is becoming more frequent of the over-action of the internal secretion of the pancreas due to adenomata of the Islands of Langerhans, which give symptoms which are even more profound and bizarre

than those due to the over-action of the parathyroid. Similar favorable results are obtained by the extirpation of these adenomas. Care must be taken, however, in that procedure to survey the whole gland meticulously in order to avoid missing multiple tumors which may be present.

Suprarenals.—The partial removal of the suprarenals or the removal of their sympathetic nerves for hypertension has been supplemented, or in many instances replaced, by a more extensive removal of the sympathetic cord either just above or just below the diaphragm. Several large series of cases have been reported yielding favorable results as regards the relief of symptoms, but without a corresponding fall in the high blood pressure. This study is progressing in a number of surgical centers and there ought to be enough data in the next few years to permit satisfactory conclusions to be drawn regarding the efficacy of these procedures.

SURGICAL INFECTIONS

Hemolytic Streptococcus.—More accurate classification of the hemolytic streptococcus has been made possible in recent years. Many of the difficulties of satisfactory serological treatment may be explained by the fact that the species divides itself up into approximately 30 distinct antigenic groups. There is some expectation that this knowledge may lead to the development of more effective serum therapy, although the efficacy of serum in hemolytic streptococcus infections is open to serious question because of the invasive properties of the organism which cannot be nullified by the ordinary anti-toxic sera. Recently, however, the chemotherapy of hemolytic streptococcus infections has met with considerable success in the use of a new red dye called prontosil. The effectiveness of this drug has been found to be due to the sulphonamide group within its chemical structure, so that more recently this fraction, which is colorless and soluble, has been used. It is given by mouth and, although it is somewhat toxic, its margin of safety seems to be fairly

wide, and untoward symptoms have not been serious. Its outstanding success has been in the treatment of puerperal fever although it probably has a much more general application in other kinds of hemolytic streptococcus infections.

Zinc Peroxide.—Where direct application of zinc peroxide can be made to infected tissues in which the hemolytic streptococcus or the anaerobic bacteria are the causative organisms, favorable results continue to be obtained. There is considerable variation, however, in the effectiveness of the zinc peroxide which may be obtained in the open market, and it is essential that material be used which will slowly but steadily yield oxygen over a considerable period of time when applied to the affected tissues. The standardizing of the preparation is proceeding satisfactorily, and it is expected that effective material will be available in large quantities in a relatively short time. The secret of success in the use of this material lies in obtaining intimate contact with all parts of the infected surface and maintaining moisture in the dressing by sealing it effectively with some impermeable covering.

Bacteriophage.—This biological method continues to give satisfactory results in the Staphylococcus and the B. coli groups of surgical infections. Here again success depends upon the careful preparation of material which must be tested for its activity against the organism involved in the lesion to be treated. This potency must be produced and maintained by meticulous care in the preparation of the phage and this requires a clear understanding of the principles involved. Likewise the success of the treatment depends upon the direct application of the bacteriophage to the infected tissues. This can be obtained in most staphylococcus infections by local injection into the lesion, and, inasmuch as it is excreted rapidly when injected into the blood stream, it is effective in the urinary tract infections when the infecting organism is B. coli.

PUBLIC HEALTH AND HYGIENE

Operative Wound Infections.—During recent years there has been renewed interest in general operating room asepsis in the effort to reduce the incidence of operative wound infections. The necessity of completely and adequately masking both the nose and mouth of every individual entering the operating room is now generally recognized. The demonstration that clean wounds heal better and yield lower incidence of infection when sutured with fine silk and when hemostasis is accomplished with the same material instead of

with catgut, has resulted in a gradual spread of the "silk technique" to many surgical clinics throughout the country. Continued efforts are being made to improve the effectiveness of skin antiseptics but the ideal one has not yet been found. In recent years the ultra violet light has been used to reduce the incidence of air borne contamination in operative wounds. It is expected and hoped that the incidence of operative wound infections will show a striking decrease if all of these efforts continue to be made by surgeons throughout the country.

PUBLIC HEALTH AND HYGIENE

By IRA V. HISCOCK

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PUBLIC HEALTH AND SOCIAL SECURITY

Chief among the developments of 1936 was the task of establishing upon sound bases the health provisions of the Social Security Act. Though relatively small in total expenditure as compared to that for other aspects of security, the beginning of a national health program was provided. The Surgeon General of the U. S. Public Health Service noted that the \$13,200,000 allotted this year from the Public Health Service and the Children's Bureau, as compared with the previous meager and sporadic Federal appropriations, represented a great advance and helped to provide more and better health service to the people. These funds made it possible to employ 2,536 full-time persons and 496 part-time workers, among whom were: 579 physicians, 1,081 nurses, 65 dentists, 144 engineers, 296 sanitary inspectors, and 174 laboratory technicians, besides much needed clerical assistance.

Administrative organization was strengthened in all States but five, and local health service was aided in all States but two. Approximately \$1,000,000 was used for the training of 1,243 persons. Besides the advancement of technical services, assistance was given in the development

of special health activities in the fields of industrial hygiene, malaria control in the Southern States, plague control on the Pacific Coast, and syphilis wherever the state health authorities were prepared to pursue the work. In order to match Federal health funds, new state and local appropriations approximated \$3,000,000.

Further impetus to public health was reported through the use of Federal emergency funds which financed the national health inventory undertaken in 1935 by the Public Health Service. This provides information concerning many aspects of national health, including the incidence and duration of serious disabling illness among 3,500,000 persons over a 12-month period; the medical and nursing service which they received; the prevalence of chronic diseases, of orthopedic defects and of blindness; the incidence of specific communicable diseases and the completeness of reporting; and the extent and utilization of medical and public health facilities in the different types of communities.

Of the changes in our social concepts, Surgeon General Parran has said: "I believe that among the changes of most significance are first, that citizens are beginning to realize

that an effective nation-wide program of public health with Federal support is a major factor in any national effort toward economic and social security, toward individual personal security, and toward the security of our major political and social institutions; for it prevents rather than alleviates much disability, dependency, and insecurity. Second, and closely related, is the dawning of the idea among the public at large that it is financially important to prevent disease. . . . It is my firm belief . . . that public health must be supported because of its human significance.”*

VITAL STATISTICS

The Vital Statistics Division of the U. S. Bureau of the Census has formulated plans designed to improve the comparability of mortality and natality statistics. More accurate comparison of birth and death rates of cities and States is insured by the introduction of residence allocation as a routine procedure. An instruction manual describing all office procedures of the Division has been issued to city and state registrars, in addition to a new series of reports which permit of prompt release of vital statistics data as soon as tabulations are completed.

PUBLIC HEALTH ENGINEERING

Studies of the effects of high rates for sewage treatment on trickling filters in Minneapolis have indicated that operations may be carried out successfully at 20,000,000 gallons per acre per day. Previously, the general practice has been to operate at rates of about 2,000,000 gallons per acre per day. Rest periods are apparently not needed, filter flies are eliminated, and the technique is modified in this new plan called aerofiltration. (H. O. Halverson, *Waterworks and Sewerage*, 83, 307, 1936).

Community sanitation has been

improved in most States; approximately 1,000,000 sanitary privies were constructed. Extensive drainage projects in 16 Southern States provided over 10,000,000 feet of ditches draining 87,000 acres and protecting 2,290,000 people against malaria. There were reported by the Surgeon General of the U. S. Public Health Service as under way or completed 4,080 projects for the extension and improvement of public water supplies and sewage disposal plants at a cost to the Federal Government of \$426,572,400. Sewage treatment facilities have been increased by more than 30 per cent during the past four years. Pollution of streams has been further reduced by the sealing of nearly 4,000 abandoned coal mines. (*Amer. Jour. P.H.*, Vol. 26, No. 11, November 1936, p. 1074).

YELLOW FEVER

From the important studies of yellow fever conducted by the Rockefeller Foundation, proof was established of the widespread dissemination of so-called jungle fever in various parts of South America in regions long considered free from the disease. Jungle yellow fever is defined as yellow fever occurring in rural, jungle, and fluvial zones in the absence of *Aedes aegypti*. The epidemiological picture of jungle yellow fever is different from that of urban and rural yellow fever transmitted by *Aedes aegypti*. The latter is characteristically a “house disease” and occurs indiscriminately among non-immunes living in or visiting infected houses. It apparently depends upon the simple cycle, man-mosquito-man, for its maintenance, and is spread from one point to another either by the movement of the human host during the period of incubation or by the accidental transportation of the infected mosquito from place to place.

Infection with jungle yellow fever is believed to occur generally in or close to uncut forest or jungle. It occurs under conditions suggesting that infections take place away from the houses and that man may not be an essential factor in the continuance of endemicity or in the spread

* Thomas Parran, Reporting Progress, *Amer. Jour. P.H.*, Vol. 26, No. 11, November, 1936; see also C. E. Waller, Public Health in the Social Security Program, with Discussion by Edith P. Sappington, National Tuberculosis Association, 32nd Annual Meeting *Proceedings*, p. 181, 1936.

of the virus from one place to another. Isolated cases occur in such a way as to indicate that factors other than the simple man-mosquito-man cycle may be involved, and to suggest that jungle yellow fever as seen in man may be but an accident, in the course of an epizootic in the lower animals, or may even be due to the persistence of the virus in invertebrate vectors for long periods of time.

Data have shown that cases of jungle yellow fever in the Valle do Chanaan occurred almost exclusively in male adults, and in the same valley, the existing immunity is almost entirely limited to the same population group. On the other hand, immunity to yellow fever in a group of Brazilian towns where transmission occurs through *Aedes aegypti* is more frequent and more uniformly distributed throughout all age groups of both sexes.

Control measures against jungle yellow fever have not been perfected. From the standpoint of international long-distance spread of yellow fever transmitted by *Aedes aegypti*, it is evident that the organization of anti-aegypti services throughout endemic areas is the greatest safeguard known. (The Rockefeller Foundation, International Health Division, *Annual Report*, 1935).

VENEREAL DISEASE CONTROL

Increased attention has been directed to measures for the control of syphilis and gonorrhea, which have a wide-spread prevalence and cause heavy economic losses annually. Scientific opinion has crystallized, especially with regard to the treatment of syphilis, and authorities agree that much progress can be made in the control of this disease if modern knowledge is accurately applied. An advisory committee to the United States Public Health Service has prepared recommendations for a Venereal Disease Control Program in state and local health departments which embrace administration, treatment, epidemiology, laboratory facilities, morbidity and mortality reports, education, and prevention.

(*Venereal Disease Information*, Vol. 17, No. 1, January, 1936, U. S. Public Health Service).

On the basis of careful studies, Surgeon General Parran has described syphilis as "a plague that disables half a million Americans a year; a plague that does a hundred times as much damage as the dreaded infantile paralysis; a plague that is wrecking lives, shattering homes and filling institutions all over the land with its insane, blind, feeble-minded or unemployable victims—that is syphilis. It bids fair to become the great American disease. And yet we might virtually stamp out this disease were we not hampered by the widespread belief that nice people don't talk about syphilis, that nice people don't have syphilis, and that nice people shouldn't do anything about those who do have syphilis."

Reference was made last year to the progress in syphilis control in Sweden. Sweden, Norway and Denmark, with a population approximately equal to New York State, have less than 1,600 cases each year. In April of 1935 there were 21,984 cases under treatment in upstate New York alone, excluding New York City. In that area, 1,836 new cases were diagnosed in one month. In Sweden, with almost exactly the same population, only 431 cases occurred during the entire year previous. During 1936, New York City developed a comprehensive control program, the remainder of New York State, through the State Department of Health, has extended the control measures, and other sections of the United States have launched activities which are promising. (Thomas Parran, "Why Don't We Stamp Out Syphilis?", *Survey Graphic*, July, 1936).

INDUSTRIAL HYGIENE

Prior to 1936 there were only five state departments of health conducting industrial hygiene activities, and most of these were limited in scope. During the year this number was increased to 17. An increasing interest in both the study and control aspects of occupational diseases

was also manifested by non-official agencies, particularly large industrial establishments, insurance companies, universities, and national organizations.

On behalf of state and territorial health officers, the Public Health Service has been instrumental in bringing about agreements with the chemical industry beneficial to the health of those working in the industry and to those using its products. The agreements cover such poisonous materials as tetraethyl lead, methanol, liquid chlorinated hydrocarbons, carbon tetrachloride, carbon disulphide, and aniline oil. Standards of health and safety are developed through the cooperative efforts of the Public Health Service, Bureau of Mines, Department of Labor, and American Standards Association. (R. R. Sayers and J. J. Bloomfield, "Industrial Hygiene Activities in the United States," *Amer. Jour. P.H.*, Vol. 26, No. 11, November, 1936.)

HOSPITALIZATION IN MENTAL HEALTH

The year 1936 saw the inauguration of a new effort to improve conditions in public hospitals for the mentally sick. After two decades of progress in the care and treatment of the insane and feeble-minded, questions of standards, quality of service, therapeutic resources, medical and nursing requirements, administrative efficiency, and other acute hospital problems have again arisen. The economic conditions of recent years and the resultant curtailment of hospital budgets, a let-up in new construction, with a consequent shortage of hospital beds, insufficient staffs, the steady increase in the numbers of those requiring hospital care, and other regressive factors threatening hospital standards have become a matter of serious concern.

Joining forces in an attempt to redress the situation, the American Psychiatric Association, American Medical Association, American Neurological Association, United States Public Health Service, and the National Committee for Mental Hygiene formed a committee to undertake a nation-wide survey of mental hos-

pitals. Through state and local studies and experimental demonstrations dealing with such issues as overcrowding, housing needs, individualization *versus* mass treatment, segregation and classification of patients, training programs, out-patient clinics, social service, administrative and fiscal problems, community relationships, boarding-out and other schemes of extra-institutional care, new efforts will be made to raise the level of hospital work throughout the country.

The question of standards will receive special study looking toward the eventual adoption of feasible hospital rating schemes to serve as a stimulus to the betterment of treatment facilities and the attainment of a higher grade of professional services. This undertaking is being financed by the Rockefeller Foundation.

The magnitude of this problem is suggested by figures in the latest Federal census, which show a total of over 450,000 patients under care in the public and private mental hospitals of the country. This is equivalent to the combined number of patients in all general hospitals. Over 75,000 new cases enter mental hospitals every year. Allowing for discharges and deaths, the population of these hospitals is increasing at the rate of approximately 13,000 a year. While the actual increase in the frequency of mental disease is small, the institutional problem continues to grow, because patients live longer than formerly, and because they enter hospitals faster than they go out, notwithstanding continued progress in treatment and cures.

DEMENTIA PRAECOX RESEARCH

Nearly half of all patients in state mental hospitals suffer from dementia praecox, the largest single unsolved problem of mental medicine. This problem is receiving special study through a series of 14 research projects set up last year under subsidies made by the Scottish Rite Masons, Northern Jurisdiction, in which some 40 trained investigators are engaged

in different sections of the country. Original scientific work has already been made possible under this program and a number of tentative observations have been reported. These must be tested further, however, before findings can be announced, but they are regarded as promising and of great importance. As a by-product of this undertaking, growing out of the work during 1936, there has been published in book form, under the title *Research in Dementia Praecox*, a report of a national survey of the problem conducted by the National Committee for Mental Hygiene, giving a full-length picture of what is being done in the field of dementia praecox research. It will serve as a foundation upon which the further development and future planning of investigation in this field will largely be based.

PROFESSIONAL EDUCATION IN MENTAL HEALTH

Progress in professional education in the mental health field is reported by the National Committee. In the medical schools this progress is reflected in a more sympathetic attitude toward psychiatry on the part of deans and faculties and in an increasing interest in the subject among medical students, with the result that graduate physicians are entering the field of mental medicine in progressively greater numbers. Increasing efforts have also been made during the past year to strengthen and extend the teaching of psychiatry in the medical schools. This is now recognized as a major subject in the curricula of a majority of the schools and of fundamental importance to the whole process of medical education. According to the latest appraisal of the courses in 68 medical schools studied over a five-year period, a high standard of psychiatric teaching is maintained in two-fifths of these schools, while another fifth shows definite improvement.

A new venture in the field of professional education is a study of teacher training and selection from the standpoint of mental hygiene atmosphere in the classroom which

was initiated in 1935. Preliminary observations of the teacher training process were made in a selected group of representative teachers' colleges; problems of psychopathology among teachers were investigated in the public school system of a large city, and an appraisal was made of personal characteristics of "good" and "bad" teachers, from the angle of their influence on the mental health of children. While it is too early to draw definite conclusions, enough has been revealed of an evidential nature to show the prevalence of maladjustment among teachers and serious weaknesses in the system of teacher training and selection and in other school practices having a detrimental effect on children. These studies will be continued in a more intensive form and on a larger scale during 1937.

CHILD NEUROLOGY

An important development in a related field is the program of research in child neurology launched in the fall of 1936 under a grant from the Friedsam Foundation of New York. This project, which is under the direction of Dr. Bernard Sachs of the New York Neurological Institute, will explore problems relating to the functioning of the child's nervous mechanisms, from their beginnings in the prenatal state up to the period of adolescence. It will center around three major divisions: organic functional disease of the nervous system in children; neuroses and psychoses in early life; and social, personality and home problems. It is national and international in scope and consists essentially in the provision of grants and of scholarships to research workers the world over. A council of three neuro-psychiatrists, three pediatricians, one orthopedist, and two laymen is directing the enterprise, and working with the council is an advisory committee composed of twelve leading American and three European neurologists.

Another outstanding event in mental health progress was the establishment of a new unit at the Rock-

land State Hospital in Orangeburg, New York, to be devoted to the study and treatment of mental and behavior disorders in children. The only other unit of its kind in this country is that in operation at the Allentown State Hospital in Pennsylvania. Such special provisions for mentally ill children will make it possible to discontinue the practice, undesirable in every way, of placing them in wards with adults. A number of buildings were set aside a few years ago at the Kings Park State Hospital on Long Island for children suffering from the after-effects of sleeping sickness, but the new Children's Unit at Orangeburg will take not the so-called organic cases but those suffering from neuroses, fears, and behavior disorders of the functional variety, and will emphasize the preventive aspects of child psychiatry. (Based on data kindly supplied by Paul O. Komora, The National Committee for Mental Hygiene).

SCHOOL HEALTH EDUCATION

School health education occupies an important place in the modern public health program, but much remains to be done in the development of practical methods and in the correlation of this work with other phases of public health practice. Based on four years of experimentation in the one and two-teacher schools of Cattaraugus County, New York, a handbook of health education has been prepared, designed primarily as a guide for teachers in rural schools. Basic policies were formulated as guides in the conduct of the program, as follows:

A school health education program should grow out of classroom situations and should come from the teachers and pupils themselves.

Activities and materials of instruction should be based on children's interests and needs, and should be positive in their application.

Each child should be helped to practice healthful living throughout the day.

Provision should be made for giving each child a basic understanding of the reasons for desirable health behavior.

Health teaching should be integrated with the everyday life of the child and all available resources should be drawn upon to accomplish this unification.

The program should identify itself with home and community programs of health and education.

Only scientifically sound facts of hygiene and health practice should be taught.

(Ruth E. Grout, *Handbook of Health Education*, Doubleday, Doran & Co., Inc., New York, 1936).

HEALTH INSURANCE

Problems of security against sickness have been subjected to exhaustive study, and principles upon which constructive action should rest have been outlined in one of the outstanding books of the year. The starting point for this study was an analysis of the economic burdens which are created by illness. This involved consideration of loss of earnings by workers who become disabled by sickness, the costs of medical care, the adequacy of medical services, the remuneration of doctors, dentists and nurses, and the financing of hospitals. European systems of health insurance are analyzed. This review of European experience with health insurance led to observations concerning plans for group payment of sickness costs in the United States and to suggestions of basic principles for an American program. "The fundamental need is to transform costs which are burdensome to individuals into costs which are budgeted by large groups of people and which are distributed over periods of time. Group payment of the costs of sickness would contribute to the economic security of a large majority of the people and would open new possibilities for the improvement of the nation's health." (I. S. Falk, *Security Against Sickness, A Study of Health Insurance*, Doubleday, Doran & Co., Inc., New York, 1936).

VITAL STATISTICS

VITAL STATISTICS

BY HALBERT L. DUNN

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INSTRUCTION MANUAL

Two editions of an *Instruction Manual* for the Division of Vital Statistics of the U. S. Bureau of the Census were issued in 1936, the first on April 3, and the second on Nov. 15. This manual outlines in detail the coding practices of the Division. It is to be kept current, no alterations being permitted unless amendments are furnished to the same mailing list to which the manual is distributed. It has been supplied to all state and city registrars and health officers and to other agents interested in the coding of birth and death certificates.

The manual consists of the following subdivisions: Route chart of coding and tabulating; organization outline; facsimile of punch cards; introduction; instructions for coding mortality transcripts; instructions to coders of causes of death; instructions to punchers of mortality cards; instructions for coding natality transcripts; instructions to punchers of natality cards; office subdivisions of causes of death; inserts and corrections to the *Manual of Joint Causes*; inserts and corrections to the *International List*; and geographic code.

It is anticipated that from time to time new sections will be added to this manual covering other phases of the work, both in the Federal Division and in the field practices of the state bureaus. For instance, a code for institutions and hospitals is in process of preparation. As section by section is added to the manual, it is hoped that eventually it will grow to become a current comprehensive encyclopedia of authoritative procedure in official Vital Statistics of the United States.

ANNUAL VOLUMES AND OTHER ROUTINE TABULATIONS

The *Vital Statistics—Special Reports* series was inaugurated on Jan. 1, 1936. The purpose of the series

was to amplify the variety and number of reports of special studies in Vital Statistics in which public interest was manifested. The page numbering in the series is consecutive throughout the year and the series is planned so that it may be bound and preserved as a volume. Volume 1, 1934, contained 21 releases and 406 pages of text and tables. Volume 2 of the series consists entirely of State Summaries for the year 1935. This volume, as yet incomplete, will include the most recent information available collected by States and published as soon as possible after the tabulation is made. The table forms are identical in all state releases so that the data for one State may be compared with that for another. The data available in each State Summary are as follows: Annual mortality and natality data for the last ten years; deaths, births, and infant deaths (under 1 year of age) by race, and sex; deaths by age, race, and sex; deaths from selected causes; deaths from selected causes in cities and rural areas; plural births, by sex and race; births by age of parents; deaths by marital status; births by race, and person in attendance; deaths by suicide, homicide, execution; deaths by institutions; deaths under 1 year of age by subdivisions of the first year of life; deaths from puerperal causes; births and deaths by month; deaths under 1 year and rates per 1,000 live births, by cause; deaths under 1 year of age, by cause, in cities and rural areas; deaths from motor-vehicle accidents by day of week and season of year; deaths due to transportation accidents; deaths from poisonings, by suicide, and by accident; accidental deaths by type and place of accident; deaths from rare causes, by county and year; births, deaths, infant deaths; births, deaths, infant deaths, and resident data for counties, and cities of 10,000 or more.

NEW PUBLICATIONS

Two routine publications not previously announced in *THE AMERICAN YEAR BOOK* were started in 1936. The *Registrar*, a four-page news bulletin, is issued on the 15th of each month. It is a cooperative official news service for the Division of Vital Statistics, Bureau of the Census, and its field representatives. It has been sent primarily to state and city registrars of Vital Statistics, as well as state and city health officers. It has proved to be of such value as a mechanism of distributing information on current activities in Vital Statistics that it is being preserved as a permanent publication by many agencies.

The *Weekly Accident Bulletin* was initiated on Sept. 5, 1936, in order to meet the growing demand for more accurate and up-to-date accident statistics. It deals with current automobile fatalities in cities of 50,000 or more. The first release contained information from 124 of these cities and an increasing number of cities in this class are agreeing to submit the data contained in the bulletin.

SPECIAL STUDIES

Legitimacy.—Special studies on a variety of subjects are being conducted by the Division of Vital Statistics. Most of these studies have not been released in final form. At the beginning of 1936 the question as to whether the fact of legitimacy should be retained on the birth certificate was widely discussed among Vital Statisticians. At the October meeting of the American Public Health Association in 1935 it had been recommended that it be removed. Due to the far-reaching effects of such an action, the Division of Vital Statistics made a questionnaire study of the subject. The study showed strong differences of opinion among various States and resulted in a decision by those interested to leave the matter of omission or inclusion of the question of legitimacy optional with the State.

Indian Mortality.—A special study of Indian mortality for the year 1934 was made during 1936. This

study classifies Indian deaths according to tribe, reservation, and agency. The results of the study will be published early in 1937.

Questionnaire on State Statistics.—An extensive questionnaire dealing with the organization of State Bureaus of Vital Statistics was collected and tabulated during 1936. It will be available in published form as a Special Report early in 1937.

Special tabulations dealing with residence allocation for both births and deaths in 1935 data were made during 1936 and will be available early in 1937. Residence tabulations of births and deaths for individual states are included in the State Summaries.

Causes of Death.—Special studies were conducted on the tabulation of contributory causes of death. All 1934 causes of death, primary and contributory, were tabulated in the State of Maryland. The contributory causes associated with 1934 maternal deaths were tabulated for the entire country. From these studies which will be made available in 1937 as Special Reports, the policy was inaugurated in 1936 of tabulating the first and second contributory causes for mortality data throughout the entire United States. The following listings are planned for each *International List* title: (1) number of deaths assigned to each title as a principal cause tabulated both with and without mention of other associated causes; (2) the aggregate number of these "Other Associated Causes"; and (3) the number of deaths under each *International List* title which are counted contributory or associated causes.

FIELD WORK

The Division has maintained two agents in the field throughout most of the year. The principal activities of these agents have been to improve completeness of registration. In particular, assistance has been rendered to the field activities of the State Bureaus of Vital Statistics in Oklahoma, Arkansas, Louisiana, and North Carolina.

VITAL STATISTICS

During 1936, the Bureau of the Census announced a new policy relative to the testing of completeness of registration of deaths and births in the States. This policy declared that the primary objective of future tests of registration would be to help the State with problems of registration rather than to threaten its removal from the registration area, and that regardless of whether the State measured above or below the accustomed standard of 90% completeness, the data would be compiled and published for scientific and public health uses.

No state tests were made for completeness of registration in 1936, although a test for Louisiana was in progress at the close of the year. The practice of testing the completeness of registration in the county unit was tried out in the State of Washington. This practice has proved to be satisfactory and should be extended to counties in other States. Promotion of better registration has been attempted in other ways. Educational mechanisms were developed, such as planned lectures, radio talks, speeches before organizations, articles, etc.

GROWTH OF THE REGISTRATION AREAS

Population, Number of Births and Deaths with Rates Per 1,000 Population, and Number of States, by Years

Cal- en- dar Year	Estimated population of continental United States	Death registration area in continental United States			Birth registration area in continental United States		
		Population		Deaths		Population	
		Number	Per- cent of total	Number	Rate per 1,000 popu- lation	Number	Per cent of total
1935	127,521,000	127,521,000	100.0	1,392,752	10.9	127,521,000	100.0
1934	126,626,000	126,626,000	100.0	1,396,903	11.0	126,626,000	100.0
1933	125,770,000	125,770,000	100.0	1,342,106	10.7	125,770,000	100.0
1932	124,974,000	119,027,000	95.2	1,308,529	11.0	119,027,000	95.2
1931	124,113,000	118,215,000	95.2	1,322,587	11.2	117,522,000	94.7
1930	123,091,000	117,249,000	95.3	1,343,356	11.5	116,556,000	94.7
1929	121,826,429	116,317,515	95.7	1,386,363	11.9	115,097,972	94.7
1928	119,861,607	114,258,516	95.3	1,378,675	12.1	113,050,663	94.3
1927	118,196,785	108,177,568	91.5	1,236,949	11.4	103,575,656	87.6
1926	116,531,963	104,938,301	90.1	1,285,927	12.3	89,682,479	77.0
1925	114,867,141	102,951,999	89.6	1,219,019	11.8	87,486,096	76.2
1924	113,202,319	100,082,062	88.4	1,173,990	11.7	86,256,025	76.2
1923	111,537,497	97,816,104	87.7	1,193,017	12.2	80,594,406	72.3
1922	109,872,675	93,866,240	85.4	1,101,863	11.7	79,415,841	72.3
1921	108,207,853	89,102,434	82.3	1,032,009	11.6	70,738,177	65.4
1920	106,543,031	87,632,592	82.3	1,142,558	13.0	63,740,689	59.8
1919	105,003,065	85,166,043	81.1	1,096,436	12.9	61,483,423	58.6
1918	103,587,955	81,333,675	78.5	1,471,367	18.1	55,515,241	53.6
1917	102,172,845	74,984,498	73.4	1,068,932	14.3	54,771,416	53.6
1916	100,757,735	71,349,162	70.8	1,001,921	14.0	32,788,670	32.5
1915	99,342,625	67,095,681	67.5	909,155	13.6	30,936,179	31.1
1914	97,927,516	65,813,315	67.2	898,059	13.6		
1913	96,512,407	63,200,625	65.5	890,848	14.1		
1912	95,097,298	60,359,974	63.5	838,251	13.9		
1911	93,682,189	59,183,071	63.2	839,284	14.2		
1910	92,267,080	53,831,742	58.3	805,412	15.0		
1909	90,691,354	50,870,518	56.1	732,538	14.4		
1908	89,073,360	46,788,913	52.5	691,574	14.8		
1907	87,455,366	43,016,990	49.2	687,034	16.0		
1906	85,837,372	41,983,419	48.9	658,105	15.7		
						2,155,105	16.9
						2,167,636	17.1
						2,081,232	16.5
						2,074,042	17.4
						2,112,760	18.0
						2,203,958	18.9
						2,169,920	18.9
						2,233,149	19.8
						2,137,836	20.6
						1,856,068	20.7
						1,878,880	21.5
						1,930,614	22.4
						1,792,646	22.2
						1,774,911	22.3
						1,714,261	22.2
						1,508,874	23.7
						1,373,438	23.3
						1,363,649	24.6
						1,353,792	24.7
						818,983	25.0
						776,304	25.1

1905	84,219,378	34,052,201	40.4	545,533	16.0	10
1904	82,601,384	33,345,163	40.4	551,354	16.5	10
1903	80,983,390	32,701,083	40.4	524,415	16.0	10
1902	79,365,396	32,029,815	40.4	508,640	15.9	10
1901	77,747,402	31,370,952	40.2	518,207	16.5	10
1900	(2) 75,994,575	30,765,618	40.5	539,939	17.6	10
Census Year						
1900	(2) 75,994,575	28,807,269	37.9	512,669	17.8	9
1890	62,947,714	19,639,440	31.2	386,212	19.6	8
1880	50,155,783	8,538,366	17.0	169,453	19.8	2

¹ North Carolina is included, although returns were received only from municipalities of 1,000 population or more in 1900; the remainder of the States was added in 1916.

² Census year ending May 31.

NOTE:—For every year the District of Columbia was in both areas, but is not included in the "number of states;" the death area also included a varying number of registration cities in nonregistration states.

BIRTHS AND DEATHS BY SEX AND RACE FOR THE UNITED STATES: 1935

Area and Sex	Exclusive of Stillbirths					
	Births			Deaths		
	Total	White	Negro	Other races	Total	White
United States	2,155,105	1,888,012	255,124	11,969	1,392,752	1,207,359
Male	1,105,489	969,916	129,578	5,995	671,320	571,298
Female	1,049,616	918,096	125,546	5,974	721,432	636,061
Cities of 10,000 and over	997,332	908,562	85,732	3,038	726,317	638,590
Male	512,618	467,400	43,741	1,477	395,283	347,888
Female	484,714	441,162	41,991	1,561	331,034	290,702
Cities of 2,500 to 10,000	219,762	202,614	16,170	978	139,432	133,432
Male	112,624	103,958	8,152	514	82,158	73,942
Female	107,138	98,656	8,018	464	66,844	59,490
Rural	938,011	776,836	153,222	7,953	517,433	435,337
Male	480,247	398,558	77,685	4,004	293,879	249,468
Female	457,764	378,278	75,537	3,949	223,554	185,869
Other races						
United States						
Male						
Female						
Cities of 10,000 and over						
Male						
Female						
Cities of 2,500 to 10,000						
Male						
Female						
Rural						
Male						
Female						

XXIII. MEDICAL SCIENCES

NATALITY AND MORTALITY, BY STATES, 1935

Population, Live Births, Deaths (Exclusive of Stillbirths), and Deaths Under 1 Year
for the United States and Each State: 1935

Area	Estimated population July 1, 1935	Live births		All deaths		Deaths under 1 year	
		Number	Rate per 1,000 esti- mated popu- lation	Number	Rate per 1,000 esti- mated popu- lation	Num- ber	Per 1,000 live births
UNITED STATES.....	127,521,000	2,155,105	16.9	1,392,752	10.9	120,138	55.7
Alabama.....	2,834,000	62,239	22.0	28,585	10.1	3,910	62.8
Arizona.....	406,000	9,139	22.5	6,077	15.0	1,021	111.7
Arkansas.....	1,999,000	35,684	17.9	16,176	8.1	1,681	47.1
California.....	5,997,000	80,131	13.4	72,456	12.1	3,978	49.6
Colorado.....	1,062,000	18,837	17.7	13,134	12.4	1,370	72.7
Connecticut.....	1,717,000	22,258	13.0	17,659	10.3	951	42.7
Delaware.....	256,000	4,036	15.8	3,208	12.5	268	66.4
District of Columbia..	594,000	10,803	18.2	8,483	14.3	642	59.4
Florida.....	1,614,000	28,051	17.4	20,046	12.4	1,736	61.9
Georgia.....	3,035,000	63,260	20.8	34,288	11.3	4,320	68.3
Idaho.....	479,000	9,469	19.8	4,531	9.5	483	51.0
Illinois.....	7,817,000	111,884	14.3	85,518	10.9	5,138	45.9
Indiana.....	3,429,000	52,909	15.4	39,515	11.5	2,690	50.8
Iowa.....	2,534,000	41,137	16.2	26,364	10.4	1,937	47.1
Kansas.....	1,878,000	30,589	16.3	20,354	10.8	1,539	50.3
Kentucky.....	2,846,000	57,715	20.3	29,370	10.3	3,388	58.7
Louisiana.....	2,120,000	42,270	19.9	23,711	11.2	2,933	69.4
Maine.....	845,000	15,723	18.6	11,024	13.0	990	63.0
Maryland.....	1,669,000	27,236	16.3	21,182	12.7	1,689	62.0
Massachusetts.....	4,375,000	63,001	14.4	50,237	11.5	3,041	48.3
Michigan.....	4,731,000	87,446	18.5	51,050	10.8	4,172	47.7
Minnesota.....	2,627,000	45,962	17.5	26,247	10.0	2,053	44.7
Mississippi.....	2,008,000	48,320	24.1	21,339	10.6	2,605	53.9
Missouri.....	3,913,000	57,299	14.6	43,201	11.0	3,262	56.9
Montana.....	531,000	10,029	18.9	6,291	11.8	602	60.0
Nebraska.....	1,364,000	23,327	17.1	13,181	9.7	960	41.2
Nevada.....	99,000	1,423	14.4	1,324	13.4	101	71.0
New Hampshire.....	502,000	7,768	15.5	6,532	13.0	419	53.9
New Jersey.....	4,288,000	54,514	12.7	43,284	10.1	2,520	46.2
New Mexico.....	422,000	13,190	31.3	6,272	14.9	1,705	129.3
New York.....	12,890,000	184,344	14.3	148,462	11.5	8,852	48.0
North Carolina.....	3,417,000	78,753	23.0	33,485	9.8	5,422	68.8
North Dakota.....	700,000	13,655	19.5	5,860	8.4	811	59.4
Ohio.....	6,707,000	101,103	15.1	77,356	11.5	5,093	50.4
Oklahoma.....	2,509,000	43,691	17.4	21,091	8.4	2,384	54.6
Oregon.....	1,008,000	13,179	13.1	11,430	11.3	543	41.2
Pennsylvania.....	10,067,000	161,166	16.0	108,555	10.8	8,194	50.8
Rhode Island.....	681,000	10,215	15.0	7,838	11.5	482	47.2
South Carolina.....	1,840,000	40,598	22.1	20,353	11.1	3,219	79.3
South Dakota.....	692,000	12,850	18.6	6,316	9.1	674	52.5
Tennessee.....	2,824,000	53,314	18.9	30,002	10.6	3,414	64.0
Texas.....	6,077,000	114,721	18.9	61,663	10.1	8,230	71.7
Utah.....	515,000	12,695	24.7	5,066	9.8	626	49.3
Vermont.....	377,000	6,591	17.5	4,777	12.7	320	48.6
Virginia.....	2,637,000	51,487	19.5	30,358	11.5	3,583	69.6
Washington.....	1,633,000	22,396	13.7	18,203	11.1	1,012	45.2
West Virginia.....	1,816,000	41,774	23.0	18,340	10.1	2,533	60.6
Wisconsin.....	2,908,000	52,562	18.1	30,694	10.6	2,419	46.0
Wyoming.....	232,000	4,362	18.8	2,284	9.8	223	51.1

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| <p>ACADEMY OF MEDICINE, 2 E. 103rd St., New York City.</p> <p>ALLIANCE AGAINST FRAUD, 36 W. 44th Street, New York City.</p> <p>ALLIED DENTAL COUNCIL, 425 Lafayette St., New York City.</p> <p>AMERICAN ACADEMY OF APPLIED DENTAL SCIENCE, 587 Fifth Ave., New York City.</p> <p>AMERICAN COLLEGE OF SURGEONS, 40 E. Erie St., Chicago, Ill.</p> <p>AMERICAN GYNECOLOGICAL SOCIETY, 1220 Park Ave., New York City.</p> <p>AMERICAN HEART ASSN., INC., 50 West 50th St., New York City.</p> <p>AMERICAN INSTITUTE OF HOMEOPATHY, 280 Madison Ave., New York City.</p> <p>AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, INC., 708 Medical Arts Building, Rochester, N. Y.</p> <p>AMERICAN MEDICAL ASSN., 535 N. Dearborn St., Chicago, Ill.</p> <p>AMERICAN OCCUPATIONAL THERAPY ASSN., 175 Fifth Ave., New York City.</p> <p>AMERICAN OPHTHALMOLOGICAL SOCIETY, 255 S. 17th St., Philadelphia, Pa.</p> <p>AMERICAN OSTEOPATHIC ASSN., 430 N. Michigan Ave., Chicago, Ill.</p> <p>AMERICAN PHYSIOLOGICAL SOCIETY, 303 East Chicago Ave., Chicago, Ill.</p> <p>AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, 531 N. Main St., South Bend, Ind.</p> <p>AMERICAN SOCIETY FOR THE CONTROL OF CANCER, 1250 Sixth Ave., New York City.</p> <p>AMERICAN SOCIETY OF TROPICAL MED-</p> | <p>ICINE, Ohio State University College of Medicine, Columbus, O.</p> <p>AMERICAN VETERINARY MEDICAL ASSN., 221 N. La Salle St., Chicago, Ill.</p> <p>ASSOCIATION OF AMERICAN MEDICAL COLLEGES, 5 S. Wabash Ave., Chicago, Ill.</p> <p>ASSOCIATION OF MILITARY SURGEONS OF THE U. S., Army Medical Museum, Washington, D. C.</p> <p>EDWARD L. TRUDEAU FOUNDATION FOR RESEARCH AND TEACHING IN TUBERCULOSIS, Saranac Lake, N. Y.</p> <p>NATIONAL LEAGUE OF NURSING EDUCATION, 50 West 50th St., New York City.</p> <p>NATIONAL TUBERCULOSIS ASSN., 50 West 50th St., New York City.</p> <p>NEW YORK ACADEMY OF SCIENCES, 77th St. and Central Park West, New York City.</p> <p>NEW YORK HEALTH DEPARTMENT, INC., 125 Worth St., New York City.</p> <p>OSTEOPATHIC AID ASSN., 60 East 42nd Street, New York City.</p> <p>PUBLIC HEALTH COMMITTEE, 2 E. 103rd St., New York City.</p> <p>ROCKEFELLER FOUNDATION, 49 W. 49th Street, New York City.</p> <p>SOCIETY OF AMERICAN BACTERIOLOGISTS, Agricultural Hall, University of Wisconsin, Madison, Wis.</p> <p>SOCIETY OF MEDICAL JURISPRUDENCE, 477 First Ave., New York City.</p> <p>SOUTHERN MEDICAL ASSN., 1928 First Ave., Birmingham, Ala.</p> <p>UNITED HOSPITAL FUND, 370 Lexington Ave., New York City.</p> <p>UNITED STATES HAY FEVER ASSN., Bethlehem, N. H.</p> |
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DIVISION XXIV

PHILOSOPHICAL AND SOCIAL SCIENCES

PSYCHOLOGY

BY WILBUR S. HULIN

PROFESSOR, OCCIDENTAL COLLEGE

AMERICAN PSYCHOLOGICAL ASSOCIATION

Annual Meeting.—The annual meeting of the American Psychological Association, held Sept. 2-5, 1936 at Dartmouth College, included an address by the President, C. L. Hull, on the subject of "Mind, Mechanism and Adaptive Behavior" (*Psych. Rev.*, Jan., 1937). A section of the meeting was held on the topic of "political psychology" which offered a new type of official interest for the association: studies of student opinion were reported by V. Jones and T. Hunt; G. W. Hartmann compared the effectiveness of "rational" and "emotional" propaganda and found that a greater memory value adhered to the emotional appeal irrespective of the character of the social group appealed to. There were several other outstanding reports. L. A. Riggs, studying dark adaptation in the vertebrate eye, measured the electric potential difference between the retina in the curarized eye of a living animal and an indifferent part of the body; this method furnishes a more exact test of sensitivity change than does introspection or observation of behavior. C. F. Jacobson studied the restitution of function after cortical injury in monkeys, and found that infant monkeys recover quite completely from motor impairments due to cerebral lesions whereas adult monkeys remain handicapped. From the results of the Bernreuter Personality Inventory on Negro college students it was shown that the colored

students display a greater feeling of self-sufficiency and dominance than do whites, according to M. Meenes. W. Dennis reported that children reared under a minimum of social stimulation develop normally and happily; the appearance of new activities comes as a result of experience derived from their own behavior rather than from "instinct."

Professional Standards.—The Association, which represents the most reliable standards and most reputable professional traditions for psychology in America, now includes 556 members and 1,431 associates. It is to be hoped that the Association may serve with increasing effectiveness the protection of the American public, as does the American Medical Association, in obtaining legislative restraint on the fraudulent psychological practitioners who disturb many homes and families and obtain more than \$100,000,000 annually from their victims.

GENERAL LITERATURE

Theoretical.—K. Lewin, prominent gestalt psychologist, has developed the scope of his school of thought to include an interpretation of social and abnormal problems; his book *Topological Psychology* (McGraw-Hill) stresses the "integrating tendencies" in mental life.

The problem of "motivation" is receiving much attention; psychologists have become increasingly aware of the need for a more comprehensive interpretation of mind. The gestalt-

psychology offered such an outlook, but to many persons their outlook was too intangible and too nearly mystical to be acceptable. More recently, evidence from biological and behavioristic sources has been reassembled under the heading of "motivation"; the new study is not a purposive interpretation but rather one of "energetics" in which an exact account is taken of "the basic energy transformations going on within the organism" in such situations as "drive," "preferences," and "conflicts"; this new treatment is notably represented by P. T. Young's book, *Motivation of Behavior* (Wiley).

History.—R. C. Davis has reviewed American psychology for the period 1800-1885: there was during that time a great predominance of the Scottish common-sense philosophy which included a distinct aptitude for medical work, an interest that prepared the way for Dewey, Ladd and James in the 80's, but the Scottish philosophy maintained a belief in the immaterialism of the Mind (*Psych. Rev.*, Nov.).

New Journal.—A new, rather popular magazine, called *Psychology Digest*, has appeared under the editorship of T. L. Garrett.

Textbooks.—The tendency for synthesis of all subjects into a "consistent psychology" is shown in G. D. Higginson's *Psychology* (Macmillan). A concise survey of the field is given in D. Fryer's and E. R. Henry's *Outline of General Psychology* (Barnes and Noble). Theory, scientific fact and practical application are brought together in D. B. Klein's *General Psychology* (Holt); the interrelation of learning and motivation is discussed with special care. W. F. Vaughn's *General Psychology* offers a thorough treatment of experience; illustrations are numerous; a work-book *Key*, by Vaughn and J. G. Needham accompanies the book (Doubleday, Doran). The subjects of intelligence and emotion are featured in J. H. Griffith's *The Psychology of Human Behavior* (Farrar and Rinehart). A volume which "aims to bring together psychology and living" is offered by D. Starch, H. M.

Stanton and W. Koerth under the title of *Controlling Human Behavior* (Macmillan); general topics are combined with special ones on vocations, selling public speech, opinion, health; it is a book for everyday life. K. Dunlap has published a text, *Elements of Psychology* (Mosby).

Experimental Method.—T. Hunt surveys the various kinds of *Measurement in Psychology* (Prentice-Hall), giving beside the mathematical methods the qualitative ones such as the physiological types of observation that are used. Also for the experimental psychologist there is J. P. Guilford's *Psychometric Methods* to be used both for the problems of "Structural psychology" and for mental testing (McGraw-Hill).

SENSATION

General.—As a synthesis between the work of Köhler and Lashley a study of "the functional relations of the sense organs to one another and the organism as a whole" is presented by W. Bornstein (*J. Gen. Psych.*, July); the fact has been determined, for example, that in vision brightness-exciting stimuli affect other sense organs, also the muscles, and through the muscles in turn other sense organs; displacements of muscle tone are measured, histological and blood changes and possibly a hormone change—all in addition to the conscious change in visual brightness.

Vision and Audition.—When intermittent spectral stimuli are used, G. A. Fry finds that the resulting colors are followed by violet or purple images if the field is dark during the interval between stimulations; the after-effect is the complementary of the stimulating color if the field is bright during the intervals (*Amer. J. Psych.*, April). When additional stimuli are present in the visual field they exert within certain limits of intensity a positive stimulating action on the absolute threshold for other color sensations (*J. Gen. Psych.*, July).

C. E. Seashore has pointed out the progress in the psychology of music; a review of the experiments on auditory nerve-impulses shows their sig-

nificance in the analysis of the tonal complexes which the sensory system transmits; innumerable new synthetic tones are being produced by vacuum tube circuits; the methods of science are being employed in the study of music itself, especially in regard to a more specific definition of each particular problem under observation (*Science*, Dec.).

Other Senses.—The cutaneous sensitivity to pressure in the region of the hair spots is not diminished by the removal of the hairs, according to G. Raffel (*J. Gen. Psych.*, July); this evidence contradicts the earlier belief about the function of the hair itself in the sensory process. Pain can become adapted if it includes a sufficiently large area of skin, reports L. J. Stone and K. M. Dallenbach; the older fact had been based on punctiform pain that no adaptation was possible (*Amer. J. Psych.*, Jan.); pain from cold may also become adapted (*ibid.*, April).

As far back as 1907 J. B. Watson suggested that the kinaesthetic sense was an adequate guide for the learning of a maze in either human or rat; since that date there has been a continuous refutation of the assertion, and at present there is good evidence, especially through the surgical elimination of the kinaesthetic afferent paths in the cervical spinal cord, or by leaving only the kinaesthetic sense intact (in the deaf-blind-anosmic-anaesthetic rat) that it is not needed in maze learning; S. Evans (*J. Genet. Psych.*), also, C. H. Honzik (*Science*, Oct.).

PERCEPTION

Vision.—"Why color in movies?" is a question discussed in the *American Cinematographer* (Aug.): in reference to the fact that the newer colors used in movies are claimed to be very pleasing and natural, yet they do not seem to belong to the texture or surface of the objects portrayed; the colors still interfere with the observers' absorption in the story—until the presence of the colors is forgotten!

When one has become accustomed to perceiving the Phi-phenomenon

(apparent visual movement) proceeding in a certain direction, it is shown by C. F. Willey that, while objective conditions may be altered to favor movement in another direction, the first form of movement will persist; this indicates the presence of established "attitude" which does not wholly agree with the gestalt-psychology point of view (*J. Exper. Psych.*, Dec.). In binocular rivalry, occurring when there is a fluctuation between the disparate images seen by each eye, changes in the speed of alteration can be regulated by dosages of sodium amytal and of caffeine; R. W. George (*J. Gen. Psych.*, July). A book for practitioners on *Visual Fields* (Distg. Serv. Found. Optomet.) by T. A. Brombach furnishes much in fact and method for the psychology laboratory.

Audition.—Actual sources of sounds are much better localized than is the artificial localization of sounds heard with ear-phones, especially when the latter sounds are pure tones; low and high tones are localized better than those of intermittent frequencies of 2,000 to 4,000 cycles, according to S. S. Stevens and E. B. Newman (*Amer. J. Psych.*, April).

Other Fields.—Cutaneous localization is much more accurate in persons of normal intelligence than in subnormals; T. N. Abel states that subnormals react in the same uncoordinated manner that children go about their attempts to localize touch sensations (*ibid.*, July).

Perceptual processes are important in maze-learning, according to D. Snygg; the learning is found to build itself up in terms of a growing comprehension of the parts of the problem; this is shown by the characteristic critical errors which develop in maze problems (*J. Genet. Psych.*, May).

FEELING

Affection.—Pleasant words elicit shorter association reaction-times than do unpleasant words (for which there is usually some inherent inhibition), according to M. M. White and M. Powell; in view of the inclination of amateur writers to dwell

on disagreeable situations it has been wondered if a richer vocabulary might exist for unpleasant words, but the present study indicates a greater readiness for the pleasing terms (*Amer. J. Psych.*, Jan.).

Expression in music, as tested by K. Hevner, depends largely on meaningful associations such as cheerfulness, solemnity, etc., which are developed both by trained and untrained subjects (*ibid.*, April). As measured by the Seashore tests of musical talent the southern Negroes are found to be inferior to Whites except for the sense of rhythm; the tests do, however, involve certain intellectual factors, such as attentiveness, which influence the results; K. L. Bean (*J. Genet. Psych.*, Sept.).

Emotion.—The systematic position of the topic of emotion, says C. A. Ruckmick, approaches a neuromotor type of theory, but explanations on such a basis are not yet worked out in sufficient detail; the affective qualities, for example, are quite entirely unaccounted for (*Psych. Rev.*, Sept.).

Among the fundamental emotional patterns is that of the "startle" reaction; W. A. Hunt and C. Landis find by motion picture analysis that this reaction involves a regular pattern of closed eyes, forward movement of head, raised shoulders, definite arm and hand movements, contraction of the abdomen, and random foot movements; all of this occurs so swiftly that it cannot be analyzed by eye (*J. Exper. Psych.*, June). There is a distinctly greater exhibition of fear and anger by persons suffering from disease, especially of an alimentary nature, than by normal persons; C. Landis and others (*Amer. J. Psychol.*, Oct.).

A complete survey of *The Psychology of Feeling and Emotion* (McGraw-Hill) by C. A. Ruckmick includes both phylogenetic considerations as well as the experimental studies on individuals; the role of affective life in the animal, child, abnormal patient, as well as the applications to cultural activities is included; a survey of all the expressive studies is also presented.

INTELLIGENCE

Training.—On the question whether college training influences the tests of intelligence, L. D. Hartson says that there is an improvement in fundamental abilities and discipline during the college period (*J. Educ. Psych.*, Oct.). Formation of vocal symbols is a factor in reading ability; studied experimentally, M. S. Card and F. L. Wells found that a distinct difference in the quickness with which different children can translate their visual perceptions into vocal terms; this particular ability is one in which specific training is needed (*J. Genet. Psych.*, March).

The Brain.—What relation between intelligence and the human brain can now be stated? J. A. Hamilton points to the very low correlation between cranial measurements and intelligence test scores, also that no particular localization of function can be related to the gross morphology of the brain, and thus that little relation is known (*Psych. Rev.*, July). On the other hand, H. F. Harlow presents the following neurophysiological correlates of intelligence: aphasias are definitely related to localized lesions, also losses of attentiveness and initiative, perceptual abilities, such as tactual localization, can be specifically destroyed by certain brain lesions (*Psych. Bull.*, July).

LEARNING

Influences.—Human conditioning in learning (*e.g.* the arousal of salivation with right or wrong responses in maze learning) is dependent on attitudinal controls; G. H. S. Razran has found central factors such as interest or restraint to be of influence, just as they have previously been shown to alter the extent of conditioned patellar responses, etc. (*J. Psych.*, Aug.). Motivation may depend on the state of metabolism; thus, K. F. Muenzinger and F. M. Fletcher find that there is a poorer performance in maze learning in rats which suffer from a vitamin B deficiency (*J. Comp. Psych.*, Aug.).

J. A. McGeoch has continued his studies in retroactive inhibition in learning: he finds that such disturb-

ance is due to the transfer of a learning attitude toward one set of material which is interpolated into another set of material which is then memorized (*J. Exper. Psych.*, Dec.).

MOTOR PHENOMENA

Individual Differences.—Schizophrenics have a lower and more variable tapping rate of motor response than do normal subjects; such is the difference at the beginning of a series of observations, but as time progresses the performance of the schizophrenics becomes quicker and steadier whereas the scores of the normal subjects remain unchanged; D. Shakow and P. E. Huston. It may be wondered if a part of the condition of the schizophrenic patients does not come from a lack of discipline in thought and behavior which might be improved. Further individual differences in the ease of establishing conditioned responses has been found by A. A. Campbell and E. R. Hilgard (*ibid.*, Oct.). L. F. Beck has found a difference for such manual-motor skills as pursuit movements and triple-plate tapping between right-handed and left-handed persons; this difference indicates the functioning of some general laterality factor (*J. Psych.*, July).

Eye-movement.—The reliability of eye-movement measurements in reading has been shown by M. A. Tinker to be sufficiently high with the first records to be of practical use; the reliability improves slightly after a few lines of printed material have been read (*J. Exper. Psych.*, Dec.).

PHYSIOLOGY

General.—Of importance to physiological psychology is the appearance of the fifth edition of the Anglo-American work by Evans on *Recent Advances in Physiology* (Oxford). The Experimental Biological Monographs (Macmillan) offer several vital books for the psychologist: these include Detwiler's *Neuroembryology*, Hecht's *Receptor Process in Vision*, Cannon and Rosenbleuth's *Autonomic Neuro-Effector Systems* and Davis' *Mechanism of Hearing*. Useful for

reference is Neal and Rand's *Comparative Anatomy* (Blackiston).

Brain Waves.—High interest continues regarding the "Berger rhythm"; this rhythm consists of a change in electrical potential (about 14 times per second) which can be recorded from the surface of the cortex or even from the skull. H. Hoagland has established "pacemakers of human brain waves in normals and in general paresics" by which he shows that the latter group exhibit marked variations in the rate and pattern of their rhythms of potential; the rhythms also differ at fever temperatures. The potential changes are supposed to be due to a periodic "firing-off" of certain large nerve cells in the layers of the cerebral cortex (*Amer. J. Physiol.*, Aug.). For a general review and description of this phenomena, see "Electric Potentials of the Human Brain," by A. L. Loomis, E. N. Harvey and G. Hobart (*J. Exper. Psych.*, June). L. E. Travis and A. Gottloben assert that the brain potentials differ from each individual person (*Science*, Dec.).

Afferent Nerve Impulses.—E. P. Fowler and T. W. Forbes have shown that a depression of the electric cochlear responses of cats occurs as a result of introduction of solutions of various densities into the round window; this result indicates that the fluid load of the endolymph of the inner ear is important in the function of hearing (*Amer. J. Physiol.*, Sept.).

Autonomic Nervous System.—While much knowledge has been gained on the function of the autonomic nervous system there is still need for understanding how everyday emotional situations come to arouse this system: C. E. Smith approaches the question from the standpoint of excitation resulting from social situations in which controversy arises, and he finds that responses akin to a form of anxiety and motor conflict are aroused (*J. Abn. & Soc. Psych.*, July). When sympathetic ganglia are transplanted, it is shown by J. W. Ward that a stereotropic influence causes the ganglia to send out fibres into the host tissue; this indicates a relative degree of inde-

pendence of function in these nerve cells (*Amer. J. Anat.*, Jan.).

ANIMAL

Texts.—A large and comprehensive three-volume treatise on *Comparative Psychology* (Ronald) has been undertaken by C. J. Warden, T. N. Jenkins and L. H. Warner; two volumes are now available; the more recent volume is on the subject of *Vertebrates*; each animal phylum is considered separately on the topics of "receptive capacities" and "reactive capacities." M. F. Washburn has published a greatly enlarged revision of her well known book, *The Animal Mind* (Macmillan); the book is especially concerned with the interpretation of animal experience.

Sensitivity.—The newborn kitten is already able to make taste discriminations between table salt and milk; after ten days, salt and bitter tastes are also distinguished; C. Pfaffmann (*J. Genet. Psych.*, Sept.). In animals the visual movement perception is shown by J. L. Kennedy to depend on impulses traversing sub-cortical brain centers (*Psych. Rev.*, Nov.). A descriptive account of a "chimpanzee family" by R. M. Yerkes shows that the mates gradually establish mutual considerateness as their married life progresses in time (*J. Genet. Psych.*, June).

EDUCATIONAL

Problems.—P. M. Symonds has brought together the topics of *Education and the Psychology of Thinking* (McGraw-Hill) and pictures the situation which faces education in training a generation to meet the changing economic and social problems; the purposes of the newer inspirational and activity methods are outlined and a description of their alleged benefits is offered along with the declaration of a challenge that the results be forthcoming. The training of elementary school teachers may be greatly aided by participation in psycho-educational clinics, so P. V. Sangren advises; the relative importance of mental hygiene and ethical considerations which enter into teaching are made more im-

pressive by such clinical observations (*Educ. Admin. & Supervis.*, Oct.).

Universities.—The challenge in recent years to the American university has led to a number of self-critical discussions: the objective of college training, as viewed by D. O. Bowan, should be definitely for vocations, including the more humble steps of business occupations; the training for clerkships should not be disregarded, because such experience plus college training leads to superior executive positions (*J. Higher Educ.*, Nov.). University traditions, as predicted by J. B. Conant, are going to emphasize both alertness and single-mindedness in the pursuit of fundamental values (*Educ. Rec.*, Oct.). Economic changes have inflicted serious changes in the facilities and opportunities for research among college departments; it is suggested by F. K. Richtmyer (*Bull. Amer. Assoc. Univ. Prof.*, Nov.) that the 300 member colleges of the association produce a "professional barometer" such as is employed by groups of business men in order to plan dependable programs of work.

GENETIC

Children.—L. Ackerson has devised an objective scale for evaluating the relative importance or "seriousness" of various behavior problems in children; the scale includes a "personality total" which indicates the number of undesirable personality traits in an individual; also a "conduct total" indicating the actual variety of overt acts; also "arrest," or actual legal encounters suffered by the child (*J. Juv. Res.*, July). Children in foster homes show, according to H. M. Skeels, a favorable improvement over the standards of their true parents: thus environment is shown to have a definite influence on individuals (*J. Genet. Psych.*, Sept.).

American Eugenics.—The American Eugenics Society has published a report on the current activities and status of the Society's program in the country; the report comes from M. Sanger, E. C. Lindeman, A. Morgan and others.

SOCIAL

Texts.—*Psychology and the Social Order* (McGraw-Hill) by J. F. Brown furnishes an introduction to the mathematics of "field theory" as devised by the German gestalt psychologists, especially as it is applied to problems of social, political and economic world order. E. Freeman's *Social Psychology* (Holt) furnishes another example of the intensive application to current facts in place of theoretical discussion; some of the usual topics, such as the "nature-nurture" controversy are omitted; instead, studies of industrial trends are present. M. Sherif's *Psychology of Social Norms* (Harper) attempts to look upon life as a laboratory in which standardized "frames of reference" can be used for the purposes of measuring individual or group conduct. R. T. LaPiere and P. R. Farnsworth base their *Social Psychology* (McGraw-Hill) quite pointedly on behavioristic observations of interaction between individuals.

Racial.—A. I. Hallowell, in discussing "Anthropology—Yesterday and Today," (*Sigma Xi Quarterly*, Sept.), stresses the importance of the social approach especially in showing how cultural diffusion is a strong determining factor in race development so that undue emphasis on evolution through inheritance may be avoided. The psychology of language is a process occurring in many mental functions including the very existence of consciousness itself, also in social control, in testing genetic development of the race, and even in physiological symptomatology (*Psych. Bull.*, March).

Mental Hygiene.—E. R. Groves and P. Blanchard have selected *Readings in Mental Hygiene* (Holt) from many fields of study and from various viewpoints including health, habit and home. H. C. Link has brought out a refreshing account of the present-day relations of religion to everyday life in his book, *The Return to Religion* (Macmillan); the book gives one a vivid realization of the contributions made by the one set of attitudes upon the other.

Personality.—L. F. Shaffer has

furnished a widely adopted book on *The Psychology of Adjustment* (Houghton, Mifflin): the main problem is that of an objective view of personality; only tangible evidence is employed as data for the test of the many criteria by which personality is judged. L. M. Terman and C. C. Miles have presented the results of a ten-year investigation of sex differences in interests, attitudes and thought trends derived both from social and educational sources of information; *Sex and Personality* (McGraw-Hill). C. C. Fry and H. W. Haggard have incorporated the various physiological and morphological facts of a reliable type into their useful book, *The Anatomy of Personality* (Harper). The development and hygiene of *Personality* (Farrar and Rinehart) have been scientifically treated by W. Richmond: body, intelligence, emotion and energy in normal and abnormal states are considered.

APPLIED

Industry.—D. A. Laird in *How to Use Psychology in Business* (McGraw-Hill) has sought to show in a practical way how the business man can analyze, understand and develop human personality; accounts are given of the radical individual, of the trouble maker, of the industrial reformer, the salesman, and others; many vocational tests are described. The magazine, *Vocational Guidance Digest* (Stanford Press) offers a survey of current activities in personnel and occupational fields. Among several books of the sort M. D. Hockenbury's helpful student employment handbook, *Make Yourself a Job* (Dauphin) is especially successful in that it cites evidence of actual use of each job described.

MISCELLANEOUS

At the meeting of the American Association for the Advancement of Science, Dec. 30 at Atlantic City, a symposium was included on the subject of "The Cortex and Behavior" in which both psychologists and

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neurophysiologists participated with reports of experimental work.

A new organization, called the Society for the Psychological Study of Social Issues, has been formed, with

G. B. Watson of Columbia University as President.

Dr. Florence Richardson Robinson died at New Haven, Conn., on Dec. 3, 1936.

PHILOSOPHY

By CHESTER TOWNSEND RUDDICK

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GENERAL

Considerations of quantity of material seem to show certain fields to be more active than others. Philosophy of Science is well to the fore, as it has been in recent years, with numerous publications of various sorts. Logic attracts a great deal of attention, particularly in those phases which are of interest to the mathematician. Social and political philosophy, stimulated by recent upheavals and innovations in the field of practice, are characterized by an endeavor to understand the significance of changes actually taking place. Ethics, perhaps for similar reasons, has challenged many writers to deal with its problems. Esthetics, too, seems to receive more attention than in most other years. Historical research continues in the even tenor of its way, adding bit to bit in the lasting endeavor to attain to a comprehensive view of the whole.

Philosophy proper, if there is such a thing, does not flourish so strongly. Except to the proponents and opponents of one movement which represents a fundamental divergence, the problems of epistemology and metaphysics have no unusual appeal. There are articles, of course, thoughtful and deserving of consideration, which deal with these problems in the traditional way. There are some few works which attempt to inject into them something new. But the number is comparatively small. The greatest stir results from the activities of the so-called "logical positivists," advocates of a point of view which has taken a strong foot-hold in some parts of Europe. This movement, it is well to note, is closely associated with Philosophy of Science.

On the whole, then, it appears that the emphasis falls upon the more practical aspects of Philosophy, and upon its relationships with other disciplines. This need not mean that any fundamental change is taking place, nor that Philosophy is in any sense on the wane; it is more likely that the subject is renewing itself through these contacts with the sources of its inspiration.

TEXTS AND TRANSLATIONS

New text-books for students are scarce. In the field of "introduction" I. Edman offers *A First Book in Philosophy* (Holt), which seems to be the only new work of the sort. Three quite different texts for Logic have appeared. S. J. Hartman's *A New Textbook in Logic* (American Book Co.) is conceived in the Aristotelian tradition, with no account of modern mathematical developments. A. P. Ushenko, on the other hand, in *The Theory of Logic* (Harper) attempts to develop the fundamentals of the symbolic logic in a simple understandable way. C. H. Patterson's *Principles of Correct Thinking* (Burgess) emphasizes the methods of the sciences. Students of Ethics will have one new text in H. H. Titus' *Ethics for Today* (American Book Co.) which emphasizes perhaps more than is usual the practical aspects of the subject. It was announced for the fall of the year.

The *Source Books in the History of the Sciences*, sponsored by the American Philosophical Association and brought out under the general editorship of G. D. Walcott, while not texts in the usual sense, are useful

to students as well as to philosophers for reference purposes. The latest to appear is the third of the series, *A Source Book in Physics* (McGraw-Hill), edited by W. F. Magie, which came out late in 1935.

The *Philosophical Classics Series* (Open Court) which has long been a mine of useful source material for students, now contains J. Gutmann's translation, *Schelling: of Human Freedom*, published with a critical introduction and notes by the translator. The teaching of Philosophy has benefited greatly in recent years by the publication, in inexpensive form, of several series of selections from important sources. There were no other additions to these series in 1936.

There is, however, a new volume in the Loeb Library of classical texts with translations which is of interest to philosophers, though hardly to beginners. This is *Aristotle: Minor Works* (Harvard University), translation by W. S. Hett.

A separate heading may be avoided if mention is made here of the announcement of the publication, in the near future, of an edition of the *Complete Works* of G. Santayana, in 14 volumes (Scribners). A collection of lectures, essays and reviews by the same writer, edited by J. Buchler and B. Schwartz under the title, *Obiter Dicta* (Scribners), appeared this year. Santayana also published, in 1936, a philosophical novel which attracted much interest: *The Last Puritan* (Scribners).

HISTORY OF PHILOSOPHY

Historical research is represented by a number of items which deal for the most part with particular men or particular problems. There have been no general surveys of the history. The longest period is covered by A. O. Lovejoy, in *The Great Chain of Being, a Study of the History of an Idea* (Harvard University), which traces the development of the notion of continuity of Being from Plato to Schelling. It contains the substance of the William James Lectures delivered in 1933.

A great deal of the historical re-

search of the late G. H. Mead is represented in *Movements of Thought in the Nineteenth Century* (University of Chicago) edited by M. H. Moore from notes and other material. Another work of the more extensive sort is G. E. Mueller's *"Geschichte der Amerikanischen Philosophie"* (Stuttgart). The author now teaches in an American university; his book is a manifestation of what appears to be a general interest in American Philosophy.

H. Cherniss, in *Aristotle's Criticism of Pre-Socratic Philosophy* (Johns Hopkins) presents the results of extensive research in the field of Ancient Philosophy.

The works of a single man are studied by a number of writers. J. Wild reviews the life and the thought of an important figure in his *George Berkeley* (Harvard University). A number of studies are brought together in the *William Torrey Harris Memorial Volume* (Open Court), which celebrates the centenary of the birth of the founder of the St. Louis Movement. While both of these works, but the latter more than the former, are more concerned with the men than with the detail of their philosophies, they are of interest to students of history.

There were, of course, numerous articles of an historical nature. Among them were the following which the writer has particularly noticed: J. A. Irving, "Leibniz' Theory of Matter" (*Phil. of Science*, III, 2); H. R. Burke, "Substance and Accident in the Philosophy of Descartes" (*New Scholasticism*, X, 4); A. J. Halpin, "The Location of Qualitative Essence, I: Aristotle and Aquinas, II: Locke and Meyerson" (*New Schol.*, X, 2, 3); D. Bidney, "Value and Reality in the Metaphysics of Spinoza" (*Phil. Rev.* XIV, 3); S. C. Tornay, "William of Ockham's Nominalism" (*Phil. Rev.* XLV, 3); A. K. Rogers, "Plato's Theory of Forms" (*Phil. Rev.* XLIV, 6 and XLV, 1); I. Edman, "Poetry and Truth in Plato" (*J. Phil.* XXXIII, 22). R. Demos, in "The Receptacle" (*Phil. Rev.* XLV, 6) expounds a conception which appears in Plato's

Timaues but in none of his other writings. It is credited by this writer as being "one of the outstanding insights in Plato's philosophy."

Mention should be made of the publication in this country of translations of important historical works. A. Schweitzer's *Indian Thought and its Development* (Holt) and E. Gilson's *Spirit of Medieval Philosophy* (Scribners) are both important books of interest to American students and scholars.

EPISTEMOLOGY AND METAPHYSICS

What have traditionally been taken to be the central problems of Philosophy are treated systematically in three different books. *A World of Chance, or Whence, Whither and Why*, by E. G. Spaulding (Macmillan) represents a development of the position of the "new realists," carried to the point of offering an account of the structure of reality as pluralistic. This account is based to a great extent upon a consideration of recent developments in Logic and in the natural sciences. As the title suggests, the indeterminacy of natural processes plays an important part in the system; contingency is a fundamental aspect of reality. G. E. Mueller attempts, in his *Philosophy of our Uncertainties* (Univ. of Oklahoma) a reformulation of Critical Idealism through the reconciliation of opposing doctrines. The sub-title, *A Comment on the Uncertainties of our Philosophers*, suggests the method of the dialectic which turns about the "certainty of uncertainty." The third systematic work is the two-volume treatise of H. W. Sanford, *Concerning Knowledge* (Putnam). Written by a non-professional philosopher, the book is said by some reviewers to suffer from too much originality and too little consideration for facts.

There are not many articles to be mentioned as contributing something new in this field. "Being and Knowing, a Dialectical Study," by G. A. DeLaguna (*Phil. Rev.*, XLV, 5) represents a somewhat unusual way of dealing with the relationship of Epistemology and Ontology. S. C.

Pepper, in "The Quest for Ignorance or the Reasonable Limits of Skepticism" (*Phil. Rev.*, XLV, 2), recommends a sort of gray skepticism which does not insist upon being too sure of itself. Minor problems are discussed by L. Wood in "Concepts and Objects" (*Phil. Rev.*, XLV, 4). The latter also has a paper on "The Principles of Philosophical Criticism" (*Monist*, XLVI, 2) in which certain criteria are established and the contention made that criticism and construction are inseparable in Philosophy. J. B. Pratt, in "The Present Status of the Mind-Body Problem" (*Phil. Rev.*, XLV, 2) questions the grounds for rejecting the interaction theory. F. J. E. Woodbridge brings to life a problem which seemed to have been laid aside in recent years: "The Problem of Consciousness Again" (*J. Phil.*, XXXIII, 21). "Determinism, Fatalism and Historical Materialism" (*J. Phil.*, XXXIII, 23) by W. Gruen stresses the possibility of interaction between different systems in which events might be determined. W. D. Oliver's "The Concept and the Thing" (*J. Phil.*, XXXIII, 3) defines the concept as a history, and finds a different sort of logic to be required to deal with it. E. G. Hall attempts an answer to the question, "Of What Use is Metaphysics?" (*J. Phil.*, XXXIII, 9). The use which he finds is a cognitive one.

The items which follow are examples of an extensive interest in problems concerning the relationship of language to epistemology. While this is one of the central problems in certain developments of the so-called Logical Positivism, it is treated in these cases in a rather general way. J. M. Brewster's article, "A Behavioristic Account of the Logical Function of Universals" (*J. Phil.*, XXXIII, 19, 20) attempts "to explain the universal reference relation which language symbols bear to their objects," stressing the "functional properties of thoughts." H. G. Alexander's "Linguistic Morphology in Relation to Thinking" (*J. Phil.*, XXXIII, 10) considers what light may be thrown upon cognition by the study of lin-

guistic morphology. The privately printed monograph of E. H. Lewis, *What a Linguistic Contextualist Thinks of Philosophers* is an elaboration of a paper read to the Pacific Division of the American Philosophical Association.

Two other books may be mentioned here, although they are of a more miscellaneous character. J. Needham's recent Terry Lectures, *Order and Life* (Yale Univ.) present the views of an eminent English biologist on the mechanist-vitalist controversy. A volume of *Philosophical Essays for Alfred North Whitehead* (Longmans) has been prepared by former students. It includes nine essays on unrelated subjects, many of which have to do with philosophical aspects of science.

LOGICAL POSITIVISM

Because of the interest which this movement is attracting just now, it seems best to consider it as a separate topic, although most of the items to be mentioned might be treated as contributions to Epistemology or Philosophy of Science. A number are included whose principal concern is the problem of meaning, which has become, for this movement, a vital one.

The origins and background of the movement are made clear in two articles. E. Nagle's "Impressions and Appraisals of Analytic Philosophy in Europe" (*J. Phil.*, XXXIII, 1, 2) reports the results of personal contacts with the founders and more important adherents of the movement, who are to be found in Cambridge University, in the membership of the so-called "Wiener Kreis," and in certain Polish universities. H. Reichenbach, one of the leaders in the movement in Germany, enlightens the American philosophic public in "Logistic Empiricism in Germany and the Present State of its Problems" (*J. Phil.*, XXXIII, 6). These, along with an article, "Meaning and Verification" (*Phil. Rev.*, XLV, 4) by the late M. Schlick, also associated with the Vienna group, indicate the interplay of interest between American and European philosophers. The lat-

ter paper discusses a criticism made by C. I. Lewis in an earlier article "Experience and Meaning" (*Phil. Rev.*, XLIII, 2).

The theory of Logical Positivism centers to some extent about theory of meaning, and it is in the discussion of this topic that American interest is manifest. Witness the following titles: H. S. Fries, "On an Empirical Criterion of Meaning" (*Phil. of Science*, III, 2); C. J. Ducasse, "Verification, Verifiability, and Meaningfulness" (*J. Phil.*, XXXIII, 9); A. C. Benjamin, "Outlines of an Empirical Theory of Meaning" (*Phil. of Sci.*, III, 3). L. Abraham, in considering "What is the Theory of Meaning about?" (*Monist*, XLVI, 2) emphasizes the ambiguities which prevail in the use of the word "meaning" and the difficulty of defining it. It is interesting that he gives some 50 quotations in which it is used in different senses.

H. Ruja criticises the basic principles of the movement in "The Logic of Logical Positivism" (*J. of Phil.*, XXXIII, 15), and argues in support of Metaphysics.

A secondary issue is treated by J. Sommerville in "The Social Ideas of the Wiener Kreis's International Congress" (*J. Phil.*, XXXIII, 11), which reviews the First International Congress for the Unity of Science, held at Paris in September, 1935.

PHILOSOPHY OF SCIENCE

There is a miscellaneous assortment of contributions to the Philosophy of Science. Efforts in this field have, as a rule, one of three objects: they are concerned about the methodology of science, about the philosophical significance of concepts of science, or with questions about the status of scientific conclusions and theories. Attempts to bring together the latest positive results of scientific investigation into vast cosmological schemes are sometimes considered, too, as part of this discipline. While in recent years there have been many works of this kind, the present one has managed to escape them.

There has been, however, considerable attention devoted to the fun-

damental problems. General problems associated with the methodology of science are discussed by B. Ginzburg in "Mechanism and Methodology of Science." (*Monist*, XLVI, 2). Another study of methodology, really an attempt to understand the motives which have prevailed in science in the past, is H. R. Burke's "Sir Isaac Newton's Formal Conception of Scientific Method" (*New Scholasticism*, X, 2), which tries to show that Newton's attitude is basically that of naïve realism.

F. S. C. Northrop, in "The Philosophical Significance of the Concept of Probability in Quantum Mechanics" (*Phil. of Science*, III, 2), discusses, with unavoidable technicality, a fundamental problem which recent developments in science have created. "The Rôle of the Observer," by N. Wiener (*Phil. of Science*, III, 3), is an "attempt to apply generally the same maxims that have proved fruitful in the development of quantum theory."

P. W. Bridgman's three Vanuxem Lectures: *The Nature of Physical Theory* (Princeton University), carry to further extremes the operational theory of meaning developed in an earlier work, attempting to apply it to the analysis of philosophical and scientific conceptions in general. P. Eichler's "Philosophy of Science" (Putnam) is an amateur's attempt in the field.

Several books should be mentioned which are not, strictly speaking, philosophical, but which are of some importance for philosophers concerned with science. *Foundations of Physics* (Wiley), by R. B. Lindsay and H. Margenau, is perhaps a sort of text-book in Physics, but its interest in foundations is a philosophical one. Excellent bibliographical material is to be found in G. Sarton's two small books, *The Study of the History of Science* and *The Study of the History of Mathematics* (Harvard University). They are essays, lectures originally, intended to orient the student in these fields. There is besides a translation of an important European book, *The Revolution in Physics*, by E. Zimmer (Harcourt),

with an introduction by M. Planck and another by the translator, H. S. Hatfield.

The *Proceedings* of the American Catholic Philosophical Association for 1935 contain papers read at the annual meeting at the end of that year on the general subject: "Philosophy of the Sciences."

LOGIC

The most important developments in the field of Logic are certainly the formation of the Association for Symbolic Logic and the appearance, in March, of its official organ, *The Journal of Symbolic Logic*, published to provide an outlet for papers which, because of their technical nature, have not been acceptable to philosophical journals in general. Officers of the Association are C. J. Ducasse, President, H. B. Curry, Vice President, C. A. Baylis, Secretary-Treasurer. The *Journal*, which is a quarterly, is edited by A. Church and C. H. Langford.

There are seldom new books in Logic, aside from texts. Numerous articles, however, have appeared. W. V. Quine has contributed two: "Toward a Calculus of Concepts" (*J. of Sym. Logic*, I, 1) and "Set-theoretic Foundations for Logic." (*J. of Sym. Logic*, I, 2). A. Emch likewise has two: "Implication and Deducibility" (*J. of Sym. Logic*), with an Addendum (*J. of Sym. Logic*, I, 2), and "Consistency and Independence in Postulational Technique" (*Phil. of Science*, III, 2). The problems with which the latter paper is concerned receive a great deal of attention from logicians. They are treated also by B. Rosser, "Constructibility as a Criterion of Existence" (*J. of Sym. Logic*, I, 1) and L. O. Kattsoff, "Postulational Methods" (*Phil. of Science*, II, 2 and III, 1, 3). The latter rather long dissertation surveys the whole problem and tries to work out a systematic basis on which to analyse the techniques of postulation.

Among the less technical articles which have to do with logic are those of O. L. Reiser, "Modern Science and Non-Aristotelian Logic" (*Monist*,

XLVI, 2), which is a discussion and criticism of the views of Korzybski, and "Necessary and Contingent Truths" by M. Lazerowitz (*Phil. Rev.*, XLV, 3) which discusses necessity in terms of symbolic logic. Another is O. O. Norris', "The Logic of Science and Technology" (*Phil. of Science*, III, 3), which proposes the development of a "Deweyan Logic" with a starting point in Professor Dewey's book *How We Think* (Heath, 1910, 1933).

Professor Dewey himself has two articles in Logic: "Characteristics and Characters: Kinds and Classes" (*J. Phil.*, XXXIII, 10) and "What are Universals?" (*J. Phil.*, XXXIII, 11). The first makes distinctions between two types of logical form (propositions about singulars involving characteristics and kinds, and propositions about universals, involving characters and classes), and the second considers the relationship between the two, which it finds to be a necessary one.

ETHICS AND ESTHETICS

A number of articles in Ethics may be cited, but no books, except for O. L. Schwartz' *Unconventional Ethics; the Ethics of Tomorrow* (Perennial Publications, Wash., D. C.) which the writer has not seen.

In "Ethics and Metaphysics," (*International Journal of Ethics*, XLVI, 4) D. Walsh argues for the necessity of metaphysical tenets at the bottom of any ethical system. R. E. Fitch supports the experimental over the dialectical method in Ethics in "The Two Methods of Ethics" (*J. Phil.*, XXXIII, 12). P. A. Bertocci, discussing "The Authority of Ethical Ideals" (*J. Phil.*, XXXIII, 10), falls back upon the "self" as the ultimate basis of authority.

J. Mayer's "Comparative Value and Human Behavior" (*Phil. Rev.*, XLV, 5) discusses standards for a quantitative comparison of value. C. Barrett finds that values are objective in the same sense in which "Life" is: "In What Sense are Values Objective?" (*J. Phil.*, XXXIII, 14). L. P. Chambers has written an historical paper, "Plato's Objective

Standard of Value" (*J. Phil.*, XXXIII, 23). J. A. Clark, in "A Definition of the Good" (*J. Phil.*, XXXIII, 16), would try to treat the problems of Ethics independently of theories of value.

In esthetics there are three books of a systematic nature. D. W. Prall's *Aesthetic Analysis* (Crowell), W. Abell's *Representation and Form* (Scribner), and F. J. Mather's *Concerning Beauty* (Princeton University). Their points of view cannot, of course, be summarized briefly. Historical research in esthetic theory is represented by "Aesthetic Imitation and Imitators in Aristotle," by K. Gilbert (*Phil. Rev.*, XLV, 6), and *The Aesthetic Theories of Kant, Hegel, and Schopenhauer*, by I. Knox (Columbia University).

Eliseo Vivas, in an article, "The Esthetic Judgment" (*J. Phil.*, XXXIII, 2), argues for the objective character of esthetic value. Ethics, esthetics, and practical philosophy in general are represented in E. A. Singer's book of essays, *On the Contented Life* (Holt). This "series of studies of the practical life" contains four systematic chapters and four others "by way of illustration."

SOCIAL AND POLITICAL PHILOSOPHY

It has been noticeable in recent years that the journals devoted primarily to Ethics have had an abundance of material dealing with social and political theory. In October, 1935, there appeared a new periodical, the *Journal of Social Philosophy*, a "quarterly devoted to a philosophic synthesis of the social sciences." Its editor is R. M. MacIver, of Columbia University; managing editor, M. J. Aronson, of the College of the City of New York. A "Symposium on Pareto's Significance for Social Theory" filled the first number; a variety of topics is to be found discussed in the others. Some of them are mentioned below.

Two articles of general interest because of their concern with the foundations of social science are J. Mayer's "Social Science Methodology" (*J. of Social Phil.*, I, 4)

and A. Goldenweiser's "Nature and Tasks of the Social Sciences" (*J. of Social Phil.*, II, 1).

Historical works are of general interest too. T. I. Cook's *History of Political Philosophy* (Prentice Hall) is most comprehensive. S. Hook offers a series of "studies in the intellectual development of Karl Marx" in *From Hegel to Marx* (John Day). The general problem of interpretation of history is dealt with by R. M. MacIver in "The Historical Pattern of Social Change" (*J. of Social Phil.*, II, 1). "Pareto's Central Analytical Scheme," by T. Parsons (*J. of Social Phil.*, I, 3) is another critical study of a writer who has attracted a great deal of attention. *Jefferson, Lenin, Socrates: Three Gods Give an Evening to Politics*, by R. Rothschild (Random House) might possibly be considered historical as well.

A whole number of one journal is devoted to discussions of "Liberalism" by J. H. Tufts, E. Jordan, H. Gomperz, C. Perry, T. V. Smith and P. Sharma (*Int. J. of Ethics*, XLVI, 3). T. V. Smith is responsible for a book, *The Promise of American Politics* (University of Chicago), and an article, "The Ethics of Fascism" (*Int. J. of Ethics*, XLVI, 2), dealing with pertinent current matters. Perhaps in the same class is W. M. Balch's "Will the West Decline to Decline?" (*J. of Social Phil.*, I, 4).

Constructive arguments are developed by J. E. Boodin in "The Biological Basis of Society" (*J. of Social Phil.*, I, 4) and A. B. Wolfe, in "Will and Reason in Economic Life" (*J. of Social Phil.*, I, 3). The latter considers "feeling" and "joy of living" to be ultimate values.

S. P. Lamprecht deals with an allied problem in his article, "Philosophy of History" (*J. Phil.*, XXXIII, 8), urging a recognition of the limitations of generalization, and pointing out the error of mistaking simplicity for evidence of inevitability.

A certain amount of missionary work is done by H. Martin in *A Philosophy of Friendship* (Deal), which is intended as "A Brief Introduction to a Social Philosophy of

Education." He urges the promotion of an ideal social order through education, which might be made to lead to a sort of "world community" in which all nations would cooperate. The essentially ethical character of democracy is emphasized by J. M. Hudson in *Why Democracy? A Study in the Philosophy of the State* (Appleton-Century).

RELIGION

There are a few more or less philosophical treatments of Religion to be noticed. An expository treatment of the subject is found in A. G. Wiggery's *Living Religions and Modern Thought* (Round Table Pr.). Fundamental problems are discussed in four books: E. C. Moore, *The Nature of Religion* (Macmillan); D. Trueblood, *The Essence of Spiritual Religion* (Harper); R. Jones, *The Testimony of the Soul* (Macmillan); and J. Macmurray, *The Structure of Religious Experience* (Yale Univ.). The last contains the Terry lectures for 1936; their author is in the University of London. Another book of the same general sort is *God and Man's Destiny*, by H. B. Alexander (Oxford).

The relation of humanism to religion is the subject of P. E. More's volume of essays, *On Being Human* (Princeton Univ.), which also offers some criticism of naturalistic views. J. Dewey, in "One Current Religious Problem" (*J. Phil.*, XXXIII, 2) considers whether or not religion is inseparable from the supernatural.

MEETINGS

The Western Division of the American Philosophical Association held its 37th annual meeting at the State University of Iowa, April 23-25, 1936. Abstracts of the papers read are published in the *Journal of Philosophy* (XXXIII, 13). The other two divisions held their meetings late in the year. A report of the 12th annual meeting of the Pacific Division, held at Stanford University, Dec. 26-28, 1935, is given in the *Journal of Philosophy* (XXXIII, 5). Abstracts of papers read at the 35th Annual meeting of the Eastern Division,

Johns Hopkins University, Dec. 29-31, 1935, were published before the meeting in the *Journal of Philosophy* (XXXII, 25). The American Catholic Philosophical Association met for the 11th year at Cleveland, Ohio, Dec. 30-31, 1935. Papers read on the general subject "Philosophy of the Sciences," published in the *Proceedings* of the Association, were mentioned above.

There was some American participation in the second International Congress for the Unity of Science, held at Copenhagen, June 21-26, 1936. The central topic of the meetings was the relation of Physic and Biology, questions concerning causality receiving the most attention. Among the contributions were papers by V. F. Lenzen and R. C. Tolman. A full report of the Congress, by W. H.

Werkmeister, appears in the *Philosophical Review* (XLV, 66).

BIBLIOGRAPHY

An annual *Bibliography of Philosophy* has been published by the *Journal of Philosophy* since 1933, to supplement the *Bibliography of Philosophy* for 1902-1932 which is in preparation under the auspices of the American Philosophic Association. The *Bibliography* for 1935 was issued as a double number of the periodical (*J. Phil.*, XXXIII, 17-18). It lists 1,543 titles of books and articles published in English, French, German and Italian, classified by subject under eight general headings. A *Bibliography of Symbolic Logic* has been undertaken by the Association for Symbolic Logic and is under way.

ANTHROPOLOGY AND ETHNOLOGY

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PHYSICAL ANTHROPOLOGY

General.—Discussing the general "Relations between physical and social anthropology" (*Essays in Anthropology* in honor of A. L. Kroeber, 15-18), F. Boas pointed out the impossibility of analyzing populations into constituent physical types without detailed knowledge of the laws of heredity for each feature and of the conditioning effects of environment. G. Taylor's "Zones and strata theory—a biological classification of races" (*Human Biology* 8:348-367) nevertheless used geographical distributions for analysis of racial origins and dispersions, and made the untenable assumptions that, although environmental factors had been basic in the original differentiation of racial forms, they had caused no important later modifications. According to Boas (op. cit.) the study of living races must include "the determining factors that stabilize or differentiate racial types: heredity, environment and selection as well as the occurrence of mutations." Physical and

physiological studies increasingly take account of social conditions affecting human form and functioning, and recognize their link with medical and biological research, as in problems of constitution, orthopedics and pediatrics (E. A. Hooton, *Science* 83:271-276). Hooton's plea for an institute for clinical anthropology led T. W. Todd (*idem* 588-590) to summarize objectives of the Developmental Health Inquiry of the Associated Foundations which, since 1930, has studied developmental growths from conception to adulthood with emphasis in recent work on skeletal maturation.

Growth.—The study of growth continued a fertile field, with methodological emphasis upon use of data on individual growth careers. Anatomical studies included N. Bayley's on changes in cephalis index during the first five years (*Human Biology* 8:1-18); N. Boyd and F. C. Davis on changes in bodily size and proportions in the first three years (*Biometrika* 27:26-87); T. W. Todd

on growth of the nasal area of the face (*International Journal of Orthodontia* 22:321-33); and M. S. Goldstein and F. L. Stanton on "Anterior and posterior movements of the teeth between two and ten years" (*Human Biology* 8:161-197). Studies of adolescence included R. G. Parker and C. P. Stone's "Physical development in relation to menarcheal age in university women" (*Human Biology* 8:198-222); A. Hrdlicka's "Puberty in Eskimo Girls" (*Proceedings, National Academy of Sciences* 22:355-357); and F. Boas and N. Michelson's investigations of age at onset of puberty in white and Negro girls. Boas and Michelson found the average age the same for individuals of the same social and economic conditions, and found no climatic factor as claimed by C. A. Mills (*American Journal of Physical Anthropology* 21 Supplement pp. 13-14).

Environment and Heredity.—

F. Boas and N. Michelson found onset of puberty and rhythm of growth in stature and weight among white and Negro girls related to social conditions. Negro children receiving Board of Health attention show the same average weight development as white children under the same care. Special environmental conditions are held responsible for the fact that the premenarcheal spurt in growth which occurs one year before puberty in both groups is more pronounced among Negroes. Study of a new generation of offspring of Eastern European Jewish immigrants showed that the plasticity in head form under changed conditions of environment, observed by Boas in 1910, has continued; while study of later immigrant arrivals indicates that stability of head form has been maintained in Europe among the groups from which the immigrants came. Boas summarized these and other "Effects of American environment on immigrants and their descendants" (*Science* 84:522-525) and concluded that "so far as the aspects studied are concerned, the descent of the individual plays an insignificant role in his behavior, that the

organism is so plastic that, in its physiological, mental and social behavior, it follows the pattern of culture with which he becomes identified."

C. Wissler found that population profiles of American Indians (*Anthropological Papers, American Museum of Natural History* 36 part 1; *Yale University Publications in Anthropology* No. 1; *Scientific Monthly* July, 1936, 5-13) are extremely sensitive to environmental conditions. "There is no specific form of age-at-death curves peculiar to either Indians, Negroes or Whites as such. Whenever Indian modes of life closely parallel those of the white people around them, their age-at-death curve will approach that of the white type." (*Human Biology* 8:223-231).

W. M. Krogman distinguished three types of traits in "Inheritance of non-pathologic traits in man" (*Eugenical News* 1936), those "readily modifiable temporarily or mildly influenced by life conditions, or non-adaptive and stable," and suggested that "only the latter adhere to Mendelian principles."

Anthropometry. — Anthropometrical methods were discussed by W. W. Howells (*Human Biology* 8:592-600) and A. Hrdlicka (*American Journal of Physical Anthropology* 21 no. 2 Supplement 287-300). The Anthropometric Committee of the American Association of Physical Anthropologists reported progress in the standardization of procedures among American workers.

Descriptive work on American Indians included that of J. C. B. Grant on Beaver, Sekani and Carrier (National Museum of Canada, *Bulletin* 81); T. D. Stewart on Eskimo and Algonquian of Labrador; C. C. Seltzer, on Yaqui of Sonora, Mexico (Texas Technological College *Bulletin* 12 No. 1); J. Gillin on Quichua of Northern Ecuador (*American Anthropologist* 39:548-555). W. W. Howells and H. Hotelling showed the southwestern Indian pelvis similar to other Indian groups, slightly smaller than the European (*American*

Journal of Physical Anthropology 21:91-105). W. M. Krogman published a comprehensive *Physical Anthropology of the Seminole Indians of Oklahoma* (Rome, 1936). W. W. Howells' work in southwestern pueblos showed "no completely consistent correspondence (of physical types) with linguistic or other cultural lines of division."

L. Sharp and W. W. Howells studied Australians; B. Campbell compared the "foot musculature of an Australian, a Hawaiian and a Chinese" (*American Journal of Physical Anthropology* 21:19-28); and W. D. Hambly worked on crania from New Guinea. On Polynesia appeared H. L. Shapiro and P. H. Buck's "Physical characteristics of the Cook Islanders" (*Memoirs of the B. P. Bishop Museum* 12, no. 1) and H. L. Shapiro's *Heritage of the Bounty* (New York, 1936), the story of the Pitcairn Islanders through six generations.

From Asia, C. C. Seltzer reported on Syrians and Armenians (*Papers of the Peabody Museum of American Archaeology and Ethnology* 13 no. 3); W. M. Shanklin on Rwala, Akeydat and Maualy Bedouins (*Journal of the Royal Anthropological Institute* 65:375-389; *American Journal of Physical Anthropology* 21: 217-252); H. Field (*idem* 21: 49-56) and M. Trotter (*idem* 21: 423-428) on Arabs of Iraq. W. M. Krogman pointed out that there was no Hittite physical type. C. W. Dupertuis, H. Dawson and W. W. Howells continued work at Harvard on the medieval and modern Irish.

C. C. Seltzer showed that in the Southwest there had been a fundamental unity of physical type, not, as earlier believed, a sweeping change in physical type between Basket Maker and Pueblo times (*American Journal of Physical Anthropology* 21 Supplement 17).

M. F. Ashley Montagu's summary of evidence indicating an adolescent sterility period in man (*idem* 21 Supplement 13) offered a plausible explanation for ethnological reports that in many areas extensive post-

pubertal but pre-marital sexual relations are accompanied by little or no illegitimacy or abortion.

LINGUISTICS

General.—Stricter methodology in phonemic recording and analysis has become the rule. Main efforts focussed on elucidation of less known primitive languages and comparative research on idioms of better known families. Outstanding linguistic events were E. Sapir's establishment of Tocharian as a "Tibetanized Indo-European idiom" (*Language* 12: 259-271); the further decipherment of many Mayan hieroglyphs by B. L. Whorf; and the final establishment of Ilingit as an Athabaskan dialect by research of E. Sapir and independent discovery of B. D. Langdon. Known to be morphologically similar to Athabaskan, E. Sapir grouped Tlingit with it and Haida in a proposed Na-Dené many years ago. The recent establishment of phonetic shifts and laws which prove Tlingit vocabulary as well to be Athabaskan has been reported and confirmed though as yet unpublished.

American Indian Languages.—Research and study of larger American Indian stocks has been carried on by T. Michelson, M. Haas and J. Geary on Algonquian; by E. Sapir, H. Hoiyer, and B. D. Langdon on Athabaskan; by F. Boas, W. Lipkind and G. Marsh on Siouan; by J. N. B. Hewitt on Iroquoian; by G. Reichard and H. Turney-High on Salish; and by M. Haas on Muskogean. M. Jacobs worked on Kalapuya, Coos, Alsea and other languages of Washington and Oregon; H. Velten on Klamath; M. M. Edell on Tillamook; M. Swadesh on Chitimacha; B. L. Whorf on Hopi; G. L. Trager on Tanoan and G. Herzog on Piman.

Publications included M. Jacobs, "Chinook Jargon Texts" (*University of Washington Publications in Anthropology* 7 no. 1); E. Kennard, "Mandan Grammar" (*International Journal of American Linguistics* 9: 1-43); G. Weltfish, "Vision of Fox Boy, a South Band Pawnee text" (*idem* 9: 44-75) and "Caddoan Texts"

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(*Publications*, American Ethnological Society 17); J. A. Mason, "Classification of the Sonoran languages" (*Essays in Anthropology* in honor of A. L. Kroeber 183-198); C. F. Voegelin, "Productive paradigms in Shawnee" (*idem* 391-404); B. L. Whorf, "Punctual and segmentative aspects of verbs in Hopi" (*Language* 12: 127-131); and T. Michelson's report on Algonquian dialects of James and Hudson's Bay (*American Anthropologist* 36:685-686).

Continuing work on Mayan languages included M. J. Andrade's comparative research on living dialects, and decipherment of Mayan hieroglyphs by B. L. Whorf and also by H. Beyer (*American Anthropologist* 38: 247-250; *Maya Research* 3: 102-104; *American Antiquity* 2: 13-14).

Special.—E. Sapir offered "Internal linguistic evidence suggestive of the northern origin of the Navaho" (*American Anthropologist* 38: 224-236). M. Jacobs suggested that "Language movements in the northwestern United States" (*Pacific Northwest Quarterly* 1936) involved gradual downstream penetration of inland peoples as a result of economic factors. M. Haas studied tonal features of Penobscot. M. Swadesh compared composite words in Chitimacha and English. C. F. Voegelin suggested paradigmatic difference as an index of dialectic differentiation. J. Henry discussed the "Linguistic expression of emotion" (*American Anthropologist* 38: 250-257).

ARCHAEOLOGY

Antiquity of Man in the New World.—A number of lines of inquiry precipitated general re-discussion of human antiquity in the Americas. The Folsom culture was further studied by F. H. H. Roberts Jr. at the Lindenmeier site (*Smithsonian Miscellaneous Collections* 95 no. 10) and near Greeley, Col.; and by E. B. Howard in caves of south-eastern New Mexico. Folsom-like and Yuma-type points, widely distributed in late and recent sites, were discussed by H. C. Shetrone (*Ohio*

State Archaeological and Historical Quarterly 45: 240-256), J. D. Figgins (*Proceedings of the Colorado Museum of Natural History* 14 no. 2) and J. L. Cotter; and C. B. Schultz found Yuman points associated with fossil bones in an old stratum in Sioux County, Neb. J. A. Mason and R. H. Merrill found no extension of the Folsom horizon, or one of equal antiquity, in northern Mexico. E. W. C. Campbell, F. W. Hodge, and others report ancient human occupation of the shores of extinct lakes and rivers in the southern California desert.

With the exact antiquity of Folsom not definitely settled, the failure of continuing research to establish a pre-Eskimo horizon in Alaska, or to discover a primitive horizon below the archaic of Mexico and Central America, and the dendrochronological determination that early Basketmaker culture in the Southwest was much later than had been thought, the problem of antiquity was widely discussed. H. J. Spinden's *World Chronology and the Peopling of America* challenged the traditional acceptance of a minimum of 10,000 to 20,000 years for man in America on the basis of data on Old World prehistory which indicates northern Asia became populated so late that man could not have entered the New World by way of Bering before 2500 B. C. A. V. Kidder's "Speculations on New World prehistory" (*Essays in Anthropology* in honor of A. L. Kroeber 143-152) nevertheless affirms that American Indian civilization grew up from pre-neolithic beginnings on this continent, and suggests that primitive horizons of the higher civilizations of Mexico and Central America may lie further southward. There can be no doubt that the cultural, linguistic and physical conditions of man in America cannot be explained within the time span allowed by Spinden's theory.

Southwest.—The outstanding development here was the distinction by E. W. Haury and H. S. Gladwin of the Basketmaker-Pueblo cultural horizon from a more southern, arid, lowland culture, the Hohokam, which

is continuous with cultures of Chihuahua in northern Mexico. E. W. Haury's "Mogollon Culture" (*Medallion Papers* 19) described a phase of this complex. E. B. Sayles established the southern extension of Hohokam in Chihuahua, and J. C. McGregor the appearance of Hohokam ball courts as far north as Flagstaff (*Museum Notes*, Museum of Northern Arizona 8: 55-58).

Research of E. V. Morris, M. R. Harrington, J. Steward, J. P. Gillin, E. W. C. and W. H. Campbell, J. O. Brew and F. Hibben continued on Basketmaker-Pueblo culture and showed that most of Nevada and wide regions of Utah belonged to the complex. F. W. Hodge's *History of Hawikuh* (Los Angeles, 1936) was a comprehensive account of the prehistory of Zuni.

F. H. H. Roberts' revised "Survey of Southwestern archaeology" (*Smithsonian Report* for 1935: 507-533) summarized these new developments. A. V. Kidder and A. E. Shepard's *Pottery of Pecos II* (Andover) appeared; and F. Hawley published a "Field manual of prehistoric southwestern pottery types" (University of New Mexico *Bulletin* 291). H. S. Colton explained the "Rise and Fall of the prehistoric population of northern Arizona" (*Science* 84: 337-343) in terms of successive periods of rural and urban living conditions.

Mexico and Central America.—Research was continued by the Carnegie Institution, University Museum, American Museum of Natural History, Smithsonian Institution, Tulane University, and the University of California. G. C. Vaillant, A. V. Kidder, S. G. Morley, S. K. Lathrop, L. Satterthwaite, F. M. Cresson, J. E. Thompson, G. Stroms-vik, R. Wauchope, K. Ruppert, A. L. Smith, H. E. D. Pollock, O. Ricketson, and J. Yde, worked on Mayan and Aztec sites of Mexico and Guatemala. W. D. Strong, A. Kidder 2nd, A. J. D. Paul, J. E. Thompson and Mrs. D. Z. Stone worked in Honduras. S. Linné, S. K. Lothrop, and H. J. and E. S. Spinden did survey and excavation work in Panama

and Nicaragua. I. T. Kelly worked on the western coast of Mexico. The main effort was to broaden knowledge of the cultures of Mexico and Central America, their spatial distributions and chronological relations.

I. T. Kelly showed that coastal cultures of western Mexico, hitherto largely unknown, are linked to Central American rather than Mexican horizons. J. A. Mason and R. H. Merrill found that Durango marked the northern limits of influence of the higher cultures of Mexico. In publications, G. C. Vaillant (*Anthropological Papers*, American Museum of Natural History 35: 136-328) described chronological aspects of the Mexican archaic, and in discussions suggested the intrusive character of the culture in the valley of Mexico. F. M. Cresson identified structures at Piedras Negras and Chichen Itza as sweat houses. F. Blom's popular account of *The Conquest of Yucatan* (Houghton, Mifflin) included description of Mayan history, daily life, and arts and crafts.

In Honduras, overlaid by old Maya-type pottery remains, W. D. Strong found a pre-Mayan culture which G. C. Vaillant considered related to earliest known occupation levels of the high lands of Guatemala.

Plains and Eastern Areas.—A general renaissance of activity here has occurred in recent years. Stimulated by general stock-taking, and systematic reclassification of cultural phases, eastern archaeologists are rapidly clarifying the prehistory of these areas by applying the advanced methods of excavation and analysis which proved rewarding in the Southwest. Finally, F. Hawley reported that application of dendrochronology to the Southeast was proving successful.

In New England, in addition to work by A. C. Parker, M. Butler, G. J. Olsen and C. C. Willoughby, a reclassification of the prehistoric areas was made by D. G. Byers and F. Johnson, and W. A. Ritchie similarly re-analyzed eastern aspects of the Hopewell phase. Algonquian

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sites in Canada were worked by W. J. Wintemberg, T. F. McIlwraith and F. G. Speck. The Hopewell phase or Central Basin culture was studied in Wisconsin by W. C. McKern, R. Linton and E. F. Wood (*American Antiquity* 1: 215-219). In the Southeast work included that of A. R. Kelly and the Laboratory of Anthropology field party (J. Birdsell, J. L. Angel, C. Wagley, W. Taylor, G. R. Willey, Han Yi Feng) on a large mound near Macon, Ga. In the Plains E. H. Bell and W. R. Wedel worked on Nebraska cultures. Wedel's "Introduction to Pawnee archaeology" (Bureau of Ethnology *Bulletin* 112) related prehistoric Pawnee to woodland cultures; and Bell reported that Central Plains culture was a phase distinct from Upper Mississippi.

South America.—Research included work in Venezuela by A. Kidder 2nd and J. L. Korn; in Chile by J. Bird and R. E. Latcham; and in Peru by W. C. Bennett. Publications were: W. C. Bennett's "Excavations in Bolivia" (*Anthropological Papers*, American Museum of Natural History, 35 part 4); G. A. Nomland's study of sites in Venezuela (*Ibero-Americana* 11); and J. A. Mason's "Archaeology of Santa Marta, Columbia" (Field Museum of Natural History).

Other Areas.—H. B. Collins, F. de Laguna, A. Hrdlicka, and F. Rainey worked on Eskimo sites in Alaska and unsuccessfully sought evidence of pre-Eskimo occupation. L. Cressman studied cultures of Oregon and Washington. H. W. Krieger, B. I. Rouse and F. G. Rainey, worked in the West Indies. D. S. Davidson discussed "Archaeological problems of northern Australia" (*Journal of the Royal Anthropological Institute* 55: 145-183); and H. Field and E. Proston summarized "Recent archaeological investigations in the Soviet Union" (*American Anthropologist* 38: 260-291).

ETHNOLOGY AND SOCIAL ANTHROPOLOGY

Field Research in North America.—While field work elsewhere in-

creased, American research was mainly on American Indians. Work was done among Rio Grande pueblos (F. Hawley, W. Whitman, F. Eggan), Hopi (E. Kennard, M. Titiev), and Navajo (G. Reichard) of the southwest; Paiute (W. Z. Park, B. Blyth), Gosiute (J. P. Gillin, J. H. Steward), northern and southern Ute (M. Opler, A. M. Cooke, J. H. Steward), and Shoshoni (J. H. Steward) of the Basin; Pawnee (G. Weltfish), Kiowa (R. W. LaBarre), Osage (W. Whitman), Cheyenne (F. Eggan) and Arapaho (H. Elkin) of the Plains; Puyallup (M. Smith), Kalispel (A. Smith), Tillamook (B. Langdon), Makah (E. Gunther) Coos and Kalapuya (M. Jacobs), lower Chinook (V. Ray), Flathead (H. Turney-High), Coast Salish (D. Jenness) and Tsimshian (V. Garfield) of Oregon, Washington and the Northwest Coast; Potawatomi and Santee Dakota (R. Landes), Seneca (W. Fenton, A. C. Parker), Cayuga, Delaware, and Cherokee (F. G. Speck) and Koasati (L. Paz), of the Eastern Woodlands and the Southeast; Salteaux (A. I. Hallowell) and other tribes of Eastern Canada (J. M. Cooper, R. Flannery) and the Mission (J. P. Harrington) and Kawaiisu (M. Zigmund) of California.

Latin American Research.—Field research in Mexico included Yaqui of Sonora (R. L. Beals), and research in Chiapas (R. L. Bunzel), Guatemala (R. Redfield, S. Tax, W. McBryde), Honduras (D. Z. Stone), and Yucatan (R. Redfield, A. Villa). C. Nimuendaju went to Ges tribes of northeastern Brazil, and J. Henry to the Pilaga in Argentine.

Other Areas.—Field research in Oceania included Fiji (B. Quain), New Guinea (R. Fortune, B. Mishkin), and Bali (M. Mead). R. F. Barton revisited Ifugao after many years. J. Andrews worked in Siam, G. T. Bowles in the southern Himalayas, A. Hudson among the Kazak. For Africa, G. Schwab went to the Basa of Cameroon; E. Ward studied the Yoruba of West Africa.

Publications.—Larger publications of note included: R. Linton's *Study*

of *Man* (Appleton), a general text which brought up to date modern information and points of view on many functional problems of ethnology; E. C. Parsons' *Mitla; Town of the Souls* (University of Chicago), a rich account of contemporary life in a town of Oaxaca; G. Herzog and C. G. Blooah's *Jabo Proverbs from Liberia* (Oxford Press), in which maxims are studied in their context in the social and legal life of a native African tribe; K. Birket-Smith's *The Eskimos* (Methuen) which appears for the first time in English translation by W. E. Calvert; R. Underhill's "Autobiography of a Papago woman" (*Memoirs, American Anthropological Association* 46), Stephens' "Hopi Journal" edited by E. C. Parsons (Columbia University *Contributions to Anthropology* 23, 2 vol.), a mine of information on older conditions at Hopi; and D. S. Davidson's "Aboriginal Australian and Tasmanian Rock Carvings and Paintings" (*Memoir* 5, American Philosophical Society). Longer monographs included J. P. Gillin's "Barama River Caribs of British Guiana" (*Papers of the Peabody Museum* 14 no. 2); C. Osgood's "Contributions to the Ethnography of the Kutchin" (*Yale University Publications in Anthropology* No. 14), one of the few long treatments of northern Athabaskan groups available; R. Olson's "Quinnault Ethnography" (University of Washington *Publications in Anthropology* v. 6); E. G. Burrows' "Ethnology of Futuna" (*Bulletin* 138, B. P. Bishop Museum); and A. Serrano's *Etnografia de la antigua provincia del Uruguay* (Buenos Aires).

Of shorter contributions, C. Osgood's "Distribution of Northern Athabaskan Indians" (*Yale University Publications in Anthropology*), L. Spier's *Tribal Distributions in Washington* (General Series in Anthropology 3), and V. F. Ray's "Native villages and groups of the Columbia Basin" (*Pacific Northwest Quarterly* 27 no. 2) fill a real need for tribal identification data on complex or little known regions. W. D. Hambly's *Primitive Hunters of Aus-*

tralia (Field Museum of Natural History) was a useful guide. M. E. Opler's "Summary of Jicarilla Apache culture" (*American Anthropologist* 38: 202-224) offered in brief compass important data on non-pueblo southwestern groups. J. H. Steward's "Shoshoni Polyandry" (*idem* 561-564) brought to further attention incipient forms of polyandrous marriage earlier reported from Pawnee, Wichita and Comanche. E. C. Parsons' "House-clan complex of the Pueblos" (*Essays in Anthropology* in honor of A. L. Kroeber) emphasized the lineage factor in pueblo social origins and that the clan is a late development conditioned by women's ownership of real estate. G. P. Murdock clarified many obscure phases of "Rank and Potlatch among the Haida" (*Yale University Publications in Anthropology* 13).

A growing emphasis was the presentation of descriptive data in functionally integrated accounts. C. DuBois' "Wealth concept as an integrative factor in Tolowa-Tututni culture" (*Essays in Anthropology* in honor of A. L. Kroeber 49-66); M. Fortes' "Ritual Festivals and Social Cohesion in the Hinterland of the Gold Coast" (*American Anthropologist* 38: 590-604); and J. Belo's "Study of a Balinese Family" (*idem* 38: 12-32) were in this trend. Increasing attention to problems in personality and social psychology was illustrated in M. E. Opler's "Interpretation of Ambivalence of two American Indian Tribes" (*Journal of Social Psychology* 7: 82-115); J. Henry's "Personality of the Kaingang Indians" (*Character and Personality* 5: 113-123); W. Morgan's "Human Wolves among the Navajo" (*Yale University Publications in Anthropology* 11); and work of M. W. Smith among the Coast Salish and A. I. Hallowell among the Salteaux. Under the supervision of the Committee on the Relation of Personality to Culture of the National Research Council a *Handbook of Psychological Leads for Ethnological Field Workers* is in preparation.

The gathering of data on the distribution of cultural elements in California, the Southwest and the

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Northwest, has continued at the University of California under the supervision of A. L. Kroeber. H. E. Driver, E. W. Gifford, J. H. Steward, O. Stewart, P. Drucker, H. Barnett, E. Voegelin and B. Aginsky have participated in this work, the objective of which is to fill out gaps in recorded information, item by item.

TECHNOLOGY

Technological study, primarily ancillary to archaeological research, emphasized ceramics and textiles. G. Reichard's *Navajo, Shepherd and Weaver* (Augustin), well illustrated, was one of the first comprehensive accounts of modern, primitive weaving. L. O'Neale continued research on textiles of Peru and Guatemala, and published "Wide-loom fabrics of the early Nazca period" (*Essays in Anthropology* in honor of A. L. Kroeber 215-228); and L. de J. Osborne described Guatemala Textiles (Tulane). H. Miner suggested as culturally diagnostic features "The importance of textiles in the archaeology of the eastern United States" (*American Antiquity* 1: 181-192). M. J. Rogers described "Yuman pottery making" (*San Diego Museum Papers* 2); L. L. Hargrave and W. Smith analyzed problems of pottery texture (*American Antiquity* 2: 32-36); and M. Butler surveyed the problems of "Pottery study in the Maya area" (*idem* 2: 89-101). J. M. Cooper studied traps of Canadian Indians.

FOLKLORE

Publications included M. J. and F. Herskovits' "Suriname Folklore" (*Columbia University Contributions to Anthropology* 27); R. Benedict's "Zuni Mythology" (*idem* 21, 2 v); E. C. Parsons' "Folklore of the Antilles" (*Memoirs of the American Folklore Society* 26 part 2); and F. G. Speck's "Penobscot Tales and Religious Beliefs" (*Journal of American Folklore* 48: 1-107). Shorter collections were J. H. Steward's from Owens Valley Paiute (University of California *Publications in American Archaeology and Ethnology* 34 No. 5); J. T. Reid's from Mexico (*Journal of American Folklore* 48: 109-124); and

R. Lehmann-Nitsche's from Argentine (*idem* 179-185). M. Beckwith visited Hawaii to restudy old folklore in relation to changing conditions of Hawaiian life.

MUSIC

In the study of primitive music the functional place of songs in their cultural setting is increasingly recognized, and the important relations between music and language. The outstanding event of the year was the death of E. M. von Hornbostel, for a generation the leading musicologist of the world. In recording, the use of improved instruments was notable. Recordings included: Cherokee and Delaware by F. G. Speck; Jemez by B. M. King; Iroquois by M. Champion; Coos by M. Jacobs. Study and transcription was done by G. Herzog on Navajo, Pima and Jabo (Eastern Liberia), J. Richardson on Kiowa, and M. Kolinsky on West African songs. Publications included: E. M. von Hornbostel, "Fuegian Songs" (*American Anthropologist* 38:357-368), in which the historical and cultural implications of forms elsewhere similar to the Fuegian are discussed; G. Herzog, *Die Musik der Karolinen-Inseln* (Hamburg 1936); H. H. Roberts, "Musical Areas in Aboriginal North America" (*Yale University Publications in Anthropology* 12); F. Densmore, "Cheyenne and Arapaho Music" (*Southwest Museum Papers* 10); and H. Wieschhoff, *Die afrikanischen Trommeln und ihre auser-afrikanischen Beziehungen* (Stuttgart 1936).

ACCULTURATION

Field studies of conditions of acculturation increased. In Yucatan and Guatemala work on Mexican communities continued under the supervision of R. Redfield; and R. Bunzel studied a Quiché community. A. R. Radcliffe-Brown studied a Chinese village and J. Embree a Japanese peasant community. H. M. Miner visited French Canadian communities, and F. Eggan studied conditions of acculturation among the Tinguian in the Philippines and the Choctaw Indians of the United

States. R. Linton began studies of Swiss and Norwegian rural communities in Wisconsin. In publications, in addition to Parsons' *Mitla*, noted elsewhere, H. S. Mekeel described the "Economy of a modern Teton Dakota community" (*Yale University Publications in Anthropology* 6), H. Zinser "A New Mexican Village" (*Journal of American Folklore* 48:125-178), and M. J. Herskovits' *Life in a Haitian Valley* (Knopf) was forthcoming. In discussion of the "Significance of the study of acculturation for anthropology" M. J. Herskovits sounded a warning note on uses and abuses of such research.

APPLIED ANTHROPOLOGY

While acculturation studies have a genuine function in the understanding of change in culture under conditions of stress and impact, many merge with studies made with practical administrative objectives. The reorganization of the Indian Office in recent years led to attempts to get adequate ethnological data for social, cultural and economic rehabilitation work among Indian groups. In its formative stage, complete studies were attempted, but the present tendency is to secure short studies covering facts needed for the solution of specific administrative problems. Under the direction of H. S. Mekeel, such studies were made in 1936 among Apache (M. E. Opler), Washo and Pit River (G. MacGregor), Flathead (C. E. Schaeffer), Chippewa (M. W. Fisher), Assiniboine, Blackfoot, Potawatomi, Sak and Fox, and Iowa (D. Rodnick), Choctaw (C. Wisdom), and Sacramento Valley, California, groups (A. Halpern). M. J. Herskovits' "Applied Anthropology and American Anthropologists" (*Science* 83:215-222), recognizing the humanitarian aspect of applied anthropology, nevertheless urged the scientific necessity for the anthropologist to maintain his fundamental objectives.

METHODOLOGY AND THEORY

A. L. Kroeber's "History and Science in Anthropology" (*American Anthropologist* 37:539-570), which criticized the work of F. Boas as non-

historical, brought a reply in which Boas (*idem* 38:137-141) clarified fundamentals of his approach. In "So-called Social Science" (*Journal of Social Philosophy* 1:317-340), A. L. Kroeber reaffirmed his concept of culture as superorganic. R. H. Lowie, on the other hand, called "Cultural anthropology: a science" (*American Journal of Sociology* 42:301-320) similar to other objective sciences and using essentially the same logical methods and procedures. "Ethnology is simply that branch of objective knowledge which defines the spatial, temporal and functional relations of cultural phenomena." W. D. Strong's "Anthropological Theory and Archaeological Fact" (*Essays in Anthropology* in honor of A. L. Kroeber 359-370) urged that sound historical conclusions could be reached only by interrelating the work of archaeologist, physical anthropologist and ethnologist. C. Kluckhohn's "Reflections on the Method and Theory of the *Kulturkreis*lehre" (*American Anthropologist* 38:157-197) defended the approach against misinterpretations, and urged its acceptance as an additional heuristic weapon, but failed to establish the validity of its method.

On kinship and social organization, A. L. Kroeber (*American Anthropologist* 38:338-341), replying to A. R. Radcliffe Brown, showed his earlier views on linguistic determination of kinship terms involved a recognition of the complexity of historical conditions affecting kinship. R. F. Benedict's "Marital Property Rights and Bilateral Society" (*American Anthropologist* 38:368-374) showed that unilateral descent factors are present in so-called bilateral primitive family conditions. R. H. Lowie critically reconsidered "L. H. Morgan in Historical Perspective" (*Essays in Anthropology* in honor of A. L. Kroeber 169-182). M. J. Herskovits' "Significance of Thorstein Veblen for Anthropology" (*American Anthropologist* 38:351-353) emphasized the trend among anthropologists to recognize wider social science perspectives. This, along with the increasing use being made of anthropological data by psychologists and sociologists, as

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in E. Freeman's *Social Psychology* (Holt) and M. Sherif's *Psychology of Social Norms* (Harper), indicates that social anthropological research will in future come more and more to stress major problems calling for cooperative effort on the part of social scientists in many fields.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

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| AMERICAN ANTHROPOLOGICAL ASSOCIATION, Yale University, New Haven, Conn. | 520 Commonwealth Ave., Boston, Mass. |
| AMERICAN ASSOCIATION OF PHYSICAL ANTHROPOLOGISTS, Wistar Institute, Philadelphia, Pa. | AMERICAN SOCIETY FOR PHYSICAL RESEARCH, 15 Lexington Ave., New York City. |
| AMERICAN ETHNOLOGICAL SOCIETY, Columbia University, New York. | AMERICAN SOCIOLOGICAL SOCIETY, 1126 E. 59th St., Chicago, Ill. |
| AMERICAN FOLKLORE SOCIETY, Columbia University, New York. | LINGUISTIC SOCIETY OF AMERICA, University of Pennsylvania, Philadelphia, Pa. |
| AMERICAN GENETIC ASSN., 308 Victor Bldg., Washington, D. C. | NATIONAL COMMITTEE FOR MENTAL HYGIENE, 50 West 50th St., New York City. |
| AMERICAN PHILOSOPHICAL SOCIETY, 104 S. 5th Street, Philadelphia, Pa. | NATIONAL INSTITUTE OF SOCIAL SCIENCES, 271 Madison Ave., New York City. |
| AMERICAN PSYCHIATRIC ASSN., 2 East 103rd St., New York City. | PSYCHOLOGICAL CORPORATION, 522 Fifth Ave., New York City. |
| AMERICAN PSYCHOLOGICAL ASSN., Univ. of Minnesota, Minneapolis, Minn. | SOCIETY FOR AMERICAN ARCHAEOLOGY, University of Michigan, Ann Arbor, Mich. |
| AMERICAN PSYCHOPATHOLOGICAL ASSN., | |

PART SEVEN
THE HUMANITIES
DIVISION XXV
LITERATURE AND LANGUAGE

FICTION

BY J. DONALD ADAMS

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TENDENCIES

With certain variations, American fiction during 1936 continued to reveal the same broad tendencies which have been in evidence during the last few years. A large number of novelists occupied themselves with the American past, and the search for new regional material was continued. There was a marked interruption of the effort to produce a class-conscious, proletarian literature, though there were several novels primarily concerned with social unrest. There was also a very noticeable decline in the number of novels in the hard-boiled manner. The year produced very few new novelists of more than ordinary promise.

Looking back over the fiction of 1936, one is struck by the relatively small part played by life in the big cities. Novels with a metropolitan background are, and have been for some time, decidedly in the minority. Farm and village life, the small town, and very recently, the old American seafaring tradition, provide the background for nearly all our novels, except in the cheapest sort of fiction. It has been true, of course, for many years that nothing is more rare in American fiction than a really good novel dealing with the life of New York.

That this avoidance of the big city has recently become more marked, except in the work of those younger writers whose minds are fixed primarily upon social change, reveals, perhaps, a natural tendency towards escape, for much of the writing concerned with earlier and simpler environments has been nostalgic in mood. And, of course, the bewildering complexity of pattern presented by contemporary city life, raises more difficult problems for the novelist.

THE SPECTACULAR SUCCESSES

Gone With the Wind.—The outstanding event of the year was the publication of Margaret Mitchell's *Gone With the Wind* (Macmillan). This novel, of which more than a million copies had been printed by the end of the year, introduced a writer with a remarkable narrative gift. It was no small feat in itself to have sustained the story interest so admirably in a book running to more than 1,000 pages; but *Gone With the Wind* displayed also an excellent sense of character, and with a fine blending of romantic and realistic treatment, set forth a vivid picture of the South in the grip of the Civil War and the Reconstruction period that followed. With its abundant vitality, its compelling interest and

the authentic quality of its background this novel was fully deserving of its enormous success.

The Last Puritan.—Totally different in character was the novel which received the next largest share of public attention, George Santayana's *The Last Puritan* (Scribner). The first, and probably the only venture into fiction of a distinguished writer and thinker, *The Last Puritan* was notable for its intellectual content rather than for its narrative interest. In the person of its chief character, it told the story of the defeat of a culture and its death, and it contained the distillation of a life-time of meditation upon the values of life. A book animated by a ripe and humane philosophy, the interest which it has aroused is no doubt, in part at least, a reflection of the widespread craving for some sort of spiritual sustenance.

THE NOVEL OF SOCIAL UNREST

Of the novels which had social conflict for their theme the most noteworthy was John Steinbeck's *In Dubious Battle* (Covici-Friede). This was a swiftly moving, dramatic story of migratory workers in a California fruit valley. Also deserving of mention in this field was Leane Zugsmith's *A Time to Remember* (Random House), a novel describing the life of a large department store and the development of a strike among its employees. Welbourne Kelly's *So Fair a House* (Morrow) dealt with social unrest in a small manufacturing city of the deep South.

Social criticism was implicit, though not directly developed, in the new novel by John Dos Passos, *The Big Money* (Harper), in which he continued the series begun in *The 42nd Parallel* and carried on in *1919*. *The Big Money* caught the highlights of the post-war boom years more vividly and more significantly than any of the fiction that has so far dealt with that period. Sherwood Anderson's *Kit Brandon—A Portrait* (Scribner) dealt with similar material in a more restricted but more emotional manner.

THE AMERICAN HISTORICAL ROMANCE

The novels concerned with a more distant American past included several that were particularly noteworthy. Walter D. Edmonds's *Drums Along the Mohawk* (Little, Brown) was a full-blooded, soundly historical story of up-State New Yorkers during the Revolutionary period, exceptionally successful in its presentation of historical characters. MacKinlay Kantor, in *Arouse and Beware* (Coward-McCann) told a superior adventure story about the flight of escaped soldiers from a Confederate prison. Roger Burlingame's *Three Bags Full* (Harcourt, Brace) was a robust narrative of succeeding generations in Central New York. Frederick Wight, in *The Chronicle of Aaron Kane* (Farrar & Rinehart) and Robert P. Tristram Coffin, in *John Dawn* (Macmillan) found their themes in the great age of American sail.

In *Black Thunder* (Macmillan) Arna Bontemps told with sensitiveness and imagination the story of the Virginia slave uprising of 1800. Agnes Sligh Turnbull's *The Rolling Years* (Macmillan) was a three-generation story with its setting in Western Pennsylvania. Naomi Lane Babson's *The Yankee Bodleys* (Reynal & Hitchcock) followed the fortunes of a New England family.

REGIONAL FICTION

Regional novels with a contemporary setting, or one recent in time, were numerous. William Faulkner's new story of the deep South, *Absalom! Absalom!* (Random House) suffered from the involved manner of its telling. In *Night Outlasts the Whippoorwill* (Macmillan) Sterling North drew a homely and sentimental picture of Wisconsin folk. Harry Kemp's *Mabel Tarner* (Lee Furman) was a nostalgic recapturing of the atmosphere of Middle Western farm life. Phil Stong, in *Career* (Harcourt, Brace), wrote of Iowans in characteristic humorous vein. Frances Frost, in *Innocent Summer* (Farrar & Rinehart), gave a sensitive rendering of life in a Vermont village, pictured

chiefly through the eyes of adolescents. *Butcher Bird* (Little, Brown) by Reuben Davis, was a half humorous, half tragic story of Negro sharecroppers. Sophus Keith Winter, in *Take All to Nebraska* (Macmillan), described the making of an American family of immigrant stock. Karlton Kelm's *The Cherry Bed* was a satirical picture of Wisconsin small town life. Two additions to the recent flock of novels about rural Maine were made by Leland Hall with *They Seldom Speak* (Harcourt, Brace) and *The Old Ashburn Place* (Dodd, Mead), by Margaret Flint.

A sprightly, graphic portrayal of the Cajuns of Louisiana was offered in Thad St. Martin's *Madame Tousseint's Wedding Day* (Little, Brown). Notable for its feeling for the locale was Louise Redfield Peattie's *American Acres* (Putnam), the story of an Illinois family. *Mountain Path* (Covici-Friede), by Harriette Simpson, introduced a new novelist who finds her material among the Southern mountaineers. Other entries in the same field were Hubert Skidmore's *I Will Lift Up Mine Eyes* (Doubleday), worth noting for its sincerity and vitality of emotion, and Kathleen Morehouse's *Rain on the Just* (Furman).

Hamilton Basso, in *Courthouse Square* (Scribner), was successful in holding the balance between realism and romance in a Southern novel; Margaret Wilson added a new chapter to the history of the McLaughlin family of Iowa in *The Law and the McLaughlins* (Doubleday). George Stewart wrote of Idaho pioneers in *Reluctant Soil* (Caxton Printers). The relation between blacks and whites was dealt with in James Saxon Childers's *A Novel About a White Man and a Black Man in the Deep South* (Farrar & Rinehart). Katharine Hamill, in *Swamp Shadow* (Knopf), composed a skilful genre picture set on the Gulf coast of Mississippi. Georgia city Negroes provided the material for Minnie Hite Moody's *Death Is a Little Man* (Messner).

Gerald Warner Brace, writing of the people on the islands off the

coast of Maine in *The Islands* (Putnam) approached his story in a less nostalgic temper than most the Down East novelists have done. Dorothy Thomas's *The Home Place* (Knopf) carried some young victims of the depression back to the family farm in Nebraska, and Elliott Merrick's *Ever the Winds Blow* (Scribner) told of a haven found from hard times in Vermont. Paul Horgan's *Main Line West* (Harper) was a rendering of Middle Western Main Street types in the period between 1900 and the World War. Elizabeth Corbett, in four loosely connected novelettes, *Mount Royal* (Reynal & Hitchcock), wrote of an Illinois town at the turn of the century.

REALISM IN URBAN FICTION

Novels which made realistic use of a big city background were, as previously indicated, few in number. James T. Farrell, with a sometimes nauseating and unnecessary naturalism, carried on his case studies of Chicago's lower middle class Irish in *A World I Never Made* (Vanguard). James Gould Cozzens, in *Men and Brethren* (Harcourt, Brace), dealt with the moral problems encountered by a New York clergyman during a single day of his ministry. David Fuchs, in *Homage to Blenholt* (Vanguard), wrote of the Jews of Williamsburg, Brooklyn. Dawn Powell's *Turn, Magic Wheel* (Farrar & Rinehart) was an ironic comedy of literary New York. Aben Kandel's *City for Conquest* (Covici-Friede) attempted through a kaleidoscopic method to reflect New York's many-sided life. Joseph F. Dineen's *Ward Eight* (Harper) concerned itself with the Irish of Boston and their political dominance, and in *King Cole* (Harper) W. R. Burnett drew the portrait of a politician.

MISCELLANEOUS NOVELS

Not so readily grouped are Booth Tarkington's *The Lorenzo Bunch* (Doubleday), a penetrating picture of the younger married group which would hold true in most good-sized American towns; D'Arcy McNickle's study of conflicting ways of life, old

and new, on a Montana Indian reservation, in *The Surrounded* (Dodd, Mead); Eleanor Green's fragile, poetic *The Hill* (Doubleday); Vardis Fisher's concluding volume of his tetralogy of development into manhood, *No Villain Need Be* (Doubleday); Robert Nathan's gently ironic *The Enchanted Voyage* (Knopf) or Du Bose Heyward's study of a middle-aged artist in *Lost Morning* (Farrar & Rinehart).

Also outside the main streams were Marcia Davenport's *Of Lena Geyer* (Scribner), the story of the life of a great singer; Alvin Johnson's recapturing of boyhood's emotions in *Spring Storm* (Knopf); Mary Roberts Rinehart's *The Doctor* (Farrar & Rinehart), the story of a man's career in medicine; Helen Hull's *Candle In-doors* (Coward-McCann), a sensitive tale of childhood; and Winifred van Etten's *I Am the Fox* (Little, Brown), a study of a hyper-sensitive girl's development.

Novels that went far afield for their material and are worth recording were few in number. Charles Nordhoff and James Norman Hall wrote a good South Sea romance in *The Hurricane* (Little, Brown); Bradford Smith did an interesting picture of contemporary Japanese life in *To the Mountain* (Bobbs-Merrill); Gertrude Atherton, in *The Golden Peacock* (Houghton Mifflin) wrote of the age of Caesar Augustus; Blair Niles, in *Day of Immense Sun* (Bobbs-Merrill), described the fall of Incaic civilization in sixteenth century Peru; Manuel Komroff, in *Waterloo* (Coward-McCann), found his theme in the Hundred Days; Vincent Sheean's *San Felice* (Doubleday) was a historical novel set in Naples in 1798 and the years immediately thereafter; Herbert Gorman's *The Mountain and the Plain* was a story of the French Revolution.

BRITISH FICTION

The most noteworthy novel by an English author was *Eyeless in Gaza* (Harper) by Aldous Huxley. Other outstanding books from the British Isles included J. B. Priestley's *They Walk in the City* (Harper), Sean

O'Faolain's *Bird Alone* (Viking), John Masefield's *Eggs and Baker, or The Dark Days of Trial* (Macmillan), Vera Brittain's *Honourable Estate* (Macmillan), George Blake's *The Shipbuilders* (Lippincott), Sylvia Townsend Warner's *Summer Will Show* (Viking), Ralph Bates's *The Olive Field* (Dutton), James Hanley's *Stoker Bush* (Macmillan), Phyllis Bentley's *Freedom Farewell* (Macmillan), Rebecca West's *The Thinking Reed* (Viking), Winifred Holtby's *South Riding* (Macmillan), Norah Hoult's *Holy Ireland* (Reynal & Hitchcock), E. M. Delafield's *Faster! Faster!* (Harper), Elizabeth Bowen's *The House in Paris* (Knopf), C. S. Forester's *The General* (Little, Brown), Norah Lofts's *I Met a Gypsy* (Knopf), Storm Jameson's *In the Second Year* (Macmillan), Rosamond Lehmann's *The Weather in the Streets* (Reynal & Hitchcock), Sylvia Thompson's *Third Act in Venice* (Little, Brown), Charles Morgan's *Sparkenbroke* (Macmillan), Marguerite Steen's *The Tavern* (Bobbs-Merrill), Susan Ertz's *Woman Alive* (Appleton-Century), L. H. Myers's *Stranger Glory* (Harcourt, Brace), Francis Hackett's *The Green Lion* (Doubleday), Hilton Brown's *Glory's Children* (Knopf), Hugh Walpole's *A Prayer for My Son* (Doubleday), L. A. G. Strong's *The Last Enemy* (Knopf), and Francis Brett Young's *Far Forest* (Reynal & Hitchcock).

TRANSLATIONS

The notable translations included Lion Feuchtwanger's *The Jew of Rome* (Viking), Hans Fallada's *Once We Had a Child* (Simon & Schuster), Alexei Tolstoy's *Darkness and Dawn* (Longmans), Kristmann Gudmundsson's *Morning of Life* (Doubleday), Arnold Zweig's *Education Before Verdun* (Viking), Trygve Gulbrandsen's *Beyond Sing the Woods* (Putnam), Halldor Laxness's *Salka Valka* (Houghton Mifflin), Andre Malraux's *Days of Wrath* (Random House), I. J. Singer's *The Brothers Ashkenazi* (Knopf), Louis Aragon's *The Bells of Basel* (Harcourt, Brace), Thomas Mann's *Stories of Three Decades*

(Knopf), Aksel Sandemose's *A Fugitive Crosses His Tracks* (Knopf), Jules Romains's *The Earth Trembles* (Knopf), Sigrid Undset's *Gunnar's Daughters* (Knopf), Sholem Asch's *The War Goes On* (Putnam), Louis Guilloux's *Bitter Victory* (McBride), Georges Duhamel's *Salavin* (Putnam), and Robert Neumann's *The Queen's Doctor* (Knopf).

THE SHORT STORY

Excluding the various anthologies, the following short story collections from American authors may be noted: Edith Wharton's *The World*

Over (Appleton-Century), Nancy Hale's *The Earliest Dreams* (Scribner), Grace Flandrau's *Under the Sun* (Scribner), Conrad Richter's *Early Americana and Other Stories* (Knopf), Paul Horgan's *The Return of the Weed* (Harper), William Saroyan's *Inhale and Exhale* (Random House), Sally Benson's *People Are Fascinating* (Covici-Friede), and Jesse Stuart's *Head o' W-Hollow* (Dutton). From Canada came Morley Callaghan's *Now That April's Here* (Random House) and from Ireland *Bones of Contention* (Macmillan) by Frank O'Connor.

POETRY

BY PETER MONRO JACK
CRITIC AND LECTURER

GENERAL

The best books of an otherwise uneventful year of poetry were Carl Sandburg's *The People, Yes* (Harcourt, Brace), A. E. Housman's *More Poems* (Knopf), T. S. Eliot's *Collected Poems* (Harcourt, Brace), Robert Frost's *A Further Range* (Holt) and W. B. Yeats's *The Oxford Book of Modern English Verse* (Oxford Univ. Press). To these may be added the notable achievement of the complete *Works of Thomas Beddoes*, edited by H. W. Donner (Oxford Univ. Press).

SANDBURG

Sandburg's *The People, Yes* is the most considerable poem he has written, and it has restored his prestige. It is a collection, skilfully varied, of the proverbial philosophy of the American people, in its slang, slogans, stories and personalities. It stems from Whitman, with the same ultimate hope in the people; but it has a keener ear for speech and is better integrated.

A. E. HOUSMAN

Housman's fastidious verse and his gentle melancholy offer a complete contrast. In his will, A. E.

Housman "permitted" but did not "enjoin" his brother Laurence Housman to print what seemed to him the best of the posthumous poems. *More Poems* is not as good a book as *A Shropshire Lad* or *Last Poems*, but it is superior to all but one or, perhaps, two contemporary poets in style and feeling. Laurence Housman gives a useful introduction, listing datings of poems since 1896 whenever possible.

T. S. ELIOT

T. S. Eliot's *Collected Poems* at last gives a complete picture, from 1917 to 1935, of the work of a poet who has, more than any single person, set the tone of contemporary poetry and criticism. Beginning in disillusion and moving bitterly and futilely through the various phases of life without faith, it ends in a careful and humble devotion to the Anglican faith. The verse is extraordinarily rich in allusion and echoes from varied poetry and metaphysics, ranging from the French *symboliste* to the broadest burlesque, from the intricate ambivalences of "The Waste Land" to the simple and lovely rhythms, reminiscent of the liturgy of "Ash Wednesday."

ROBERT FROST

Robert Frost's *A Further Range* has chosen either an ironic or a minatory title. His best work has been with the New England countryside, with the poet turned out of door. The new poems, which were chosen by The Book of the Month Club for June, turn to political subjects with no further equipment than a vague conservatism. They do not cut sharply as his nature poems did. There is no further range, there is instead an ignominious retreat, but the matter is still in dispute, and at the moment we can only say that Frost threatens to destroy his hard-won and admirable equanimity.

COLLECTIONS AND SELECTIONS

Witter Bynner shows an unusual range of verse from gay to grave in the selection made by Robert Hunt, with a preface by the novelist Paul Horgan (Knopf), and in the end he will stand or fall by this volume. His celebration of friendship in "Eden Tree" seems to be his finest kind of poetry; easy, conversational, and not too exacting.

John Hall Wheelock has been writing since 1911 and has collected his poems to 1936 (Scribner). Their fashion is out of date, in their sentiment and their rhetoric; but they are still good for a revival in less peremptory times.

Ford Madox Ford.—For a cursory view of pre-war poems, war poems, and post-war poems nothing is more useful than Ford Madox Ford's *Collected Poems* (Oxford Univ. Press). A lively preface reminds us of Ford's place in the revival of good magazine verse, of his championship of Hardy's poetry, and his ill-advised advocacy of free verse. Many of his poems had the distinction of being banned by the British censor, only to be used later as propaganda for the Allies—an invaluable social document.

Others.—Austin Clarke's *Irish Collected Poems* (Macmillan) has an introduction by Padraic Colum. *The Golden Fleece*, a collection of poems and ballads old and new, has "all the poems I care for" by William

Rose Benét (Dodd, Mead). The well-tempered and unusual verse of Ruth Pitter has been collected, from the last ten years, under the title, *A Trophy of Arms*. (Macmillan). Her work has been praised by many poets, and it is prefaced here by James Stephens. James Joyce's *Collected Poems* are published by the Black Sun Press. The Oxford Press has added to its series the *Poetical Works* of Robert Bridges, and Holt has published *The Collected Poems* (1919 to 1934) of Walter de la Mare.

ANTHOLOGIES

W. B. Yeats in his anthology of modern poetry for the Oxford series has annoyed and exhilarated his readers almost from page to page. As probably the most important poet alive, he was given a free hand with contemporary poetry, and he played it without regard to convention. Many Irish poets, generally unknown, are represented, and a number of Georgian poets, like W. J. Turner, have taken the place that a few American poets might have had, though Eliot, Pound, and Flint are included, on the score of their residence and affiliations abroad. The introduction states that the early twentieth century has seen more interesting varieties of poetry than any period since the early seventeenth century. The anthology would have been still more interesting for a wider variety. The general tone is one of escape from or exasperation with existing social conditions. It portrays the present age mainly by indirection.

Reynal and Hitchcock have published an *Anthology of World Poetry*, edited by Carl Van Doren, with 200 pp. of new poems, to be had also in various separate sections. Louis Untermeyer has revised his *Modern British and Modern American Poetry*. Charles Williams has edited *The New Book of English Verse* (Macmillan), using much longer extracts than usual, and using nothing already in the collections of Palgrave (*Golden Treasury*) or Quiller-Couch (*Oxford Book of English Verse*). In *The Valiant Muse* Frederick W. Ziv collects the poems of poets killed in the war (Put-

nam). In *Man Answers Death* Corliss Lamont, who believes in humanism, and not in immortality, offers consolation to those of like belief. An interesting and popular anthology has been devised by Hazel Felleman, editor of *Queries and Answers* Department of *The New York Times Book Review*. Here are the *Best Loved Poems of the American People*, based on the request of readers all over the nation. Thomas Moults annual selection, *The Best Poems of 1936*, (Harcourt, Brace) contains what he considers the best poems from English and American periodicals.

MISCELLANIES

Of the more adventurous miscellanies containing the poetry of younger writers, the best have been *The New Caravan* (Norton), edited by Lewis Mumford, Paul Rosenfeld, and Alfred Kreymborg, the fifth volume; *New Directions in Prose and Poetry*, edited by James Laughlin IV (Norfolk, Conn.), with Wallace Stevens, Ezra Pound, W. C. Williams, Kay Boyle and other experimental writers; and *New Writing II*, edited by John Lehmann (London, The Bodley Head), an outlet for writers, English and American, not likely to be published in established magazines.

CONTINUATIONS

Besides writing his autobiography this year Edgar Lee Masters has found time to publish *Poems of People* (Appleton-Century Company) and *The Golden Fleece of California* (Countryman Press), the latter a narrative of the gold rush, and neither in the class of *Spoon River Anthology*. Wallace Stevens has a trade edition of *Ideas of Order* (Knopf) and a new volume (*Owl's Clover*, Alcectis Press, which won the Nation prize) of poems on the social order, in admirable aesthetic. Conrad Aiken continues to write well in his *Time in the Rock*, subtitled "Preludes to Definition" (Scribner). Paul Engle, whose *American Song* was so much praised (1934), makes an astonishing change in *Break the Heart's Anger* (Doubleday, Doran), a series of poems on England, Germany, Russia, etc. anti-

Fascist and pro-Lenin, with no good word for the democracies of England and America. Archibald MacLeish, technically one of the best equipped of poets, veers to the left in the 20 poems in *Public Speech* (Farrar & Rinehart), which also includes some of his excellent private love poems.

Genevieve Taggard is another well-known poet who writes verse of a political and radical nature, but it is generally felt that her *Calling Western Union* (Harper) spoils its poetry by its preaching. C. Day Lewis, from the English group of pro-Communist poets, includes in *A Time to Dance* (Random House) a long poem on a symbolic airplane flight, a morality play on the deluge of the present social order, and an essay on "Revolution in Writing." Stephen Vincent Benét seems caught with the general unrest, and in *Burning City* (Farrar & Rinehart) he contributes a fantastic series of nightmares on the death of our culture.

On the other hand, Allen Tate looks back nostalgically to the old Southern life in *The Mediterranean* (Alcectis Press), in a series of intricately argued metaphysical poems. Siegfried Sassoon continues his reveries on the War and its aftermath in *Vigils* (The Viking Press), now more gently and elegiacally. Marianne Moore, former editor of *The Dial*, refines her delicate art still further in *The Pangolin and Other Verse* (Brendin Publishing Company). William Carlos Williams is still faithful to the *imagiste* creed in *Adam & Eve & the City* (Alcectis). John Peale Bishop's *Minute Particulars* and Robert Penn Warren's *Thirty-six Poems* offer a poetic sensibility unaffected by social and political distress. Joseph Auslander (*More Than Bread*, Macmillan), Arthur Davidson Ficke (*The Secret*, Doubleday, Doran), Leonard Bacon (*Rhyme and Punishment*, Farrar & Rinehart), and Audrey Wurdeman (*Splendour in the Grass*, Harper) continue their yearly output. Nathalia Crane, who began writing verse as a child prodigy at the age of 10, continues at the age of 22 (*Swear by the Night*) in much the same style.

HISTORY

TRANSLATIONS

The best translation of the year, and a sorely needed one, is *The Alcestis of Euripides*, by Dudley Fitts and Robert Fitzgerald (Harcourt, Brace). The most discussed was Baudelaire's *Flowers of Evil* translated by Edna St. Vincent Millay and George Dillon (Harper), with the original texts and a preface by Miss Millay, a translation that was, on the whole, discredited as being quite unfaithful to the original. The translation of the *Works of Alexander Pushkin*, by Avrahm Yarmolinsky and Babette Deutsch (Random House), for the anniversary of Pushkin's death in 1937, has had an almost similar critical reception. Max Eastman declared it to be "a calamity both in literature and in our cultural relations with Russia." John Cournots admired it with reservations. Others have praised it. There has also been published a translation of some of Pushkin's legends under the title, *The Russian Wonderland*, by Boris Brasor (Paisley Press).

NEW POETS

Perhaps the most interesting of the younger poets is Frederic Prokosch, who wrote a fine novel in *The Asiatics*, and now writes his first verse in *The*

Assassins (Harper). His poems are unusually diversified cosmopolitan and sophisticated for so young a poet, but their best gift is expressiveness, with which Mr. Prokosch might do anything. The two proletarian poets of promise are Kenneth Patchen in *Before the Brave* (Random House) and Edwin Rolfe in *To My Contemporaries* (Dynamo Press), both interesting ethically and aesthetically. Farrar & Rinehart have selected for their "Discoverers" series the *Prelude to Icaros* by John Williams Andrews, a long poem on aviation by an expert pilot and an inexpert poet. C. A. Millsbaugh's *In Sight of Mountains* (Doubleday, Doran) seems to be the best of the first volumes, with more independence recognizable among the many influences.

LIGHT VERSE

Light verse has been various and amusing. The best of a good crop are Franklin P. Adam's *The Melancholy Lute*, Arthur Guiterman's *Gaily the Troubadour*, Ogden Nash's (illustrated) *Bad Parents' Garden of Verses*, and Dorothy Parker's collection, *Not as Deep as a Well*. On the whole the year has done little for poetry, save for the credit of the older poets.

HISTORY

By PAUL H. BUCK

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GENERAL

Prominent tendencies in the historiography of the year were (1) the continued interest in a wide range of themes, (2) vigorous activity in regional studies, and (3) the breadth and maturity of American interest in the history of other countries.

COOPERATIVE HISTORIES

As the scope of history steadily widens, the work of synthesis on a large scale becomes increasingly difficult. The cooperative history is one solution of this problem. The year 1936 saw the completion of one such

series, the near completion of a second, and the continued progress of a third. The excellent *History of the State of New York* (Columbia), edited by A. C. Flick, scholarly in content and beautiful in format, was completed by the publication of volumes nine and ten which deal with recent and contemporary years.

Much broader in scope is the cooperative *History of American Life* (Macmillan), edited with great skill by A. M. Schlesinger and D. R. Fox, whose ten volumes now published out of a projected twelve give to American readers the most complete

narrative and best interpretation of their social and intellectual development. One volume of this series was published during the year, Ida M. Tarbell's *The Nationalizing of Business, 1878-1898*, dealing primarily with the economic history of the period.

A group of American scholars, under the editorship of W. L. Langer, are engaged in writing a comprehensive series of volumes on *The Rise of Modern Europe* (Harper), a series which promises to be a major achievement of contemporary historiography. Four volumes of this series have now been published, two of which made their appearance within the current year—E. P. Cheyney's *Dawn of a New Era, 1250-1453* and R. C. Binkley's *Realism and Nationalism, 1852-1871*.

POLITICAL HISTORY

F. L. Paxson published the first volume of an important projected history of the United States during the war with Germany. *Pre-War Years, 1913-1917* (Houghton Mifflin), is a comprehensive narrative, strong in research and sober in judgment, of the Wilsonian domestic reforms, the complicated problems of neutrality, and the entrance of the United States into the war.

Three books from the pens of well-known writers testify to the persistent influence of Thomas Jefferson in American political history. C. G. Bowers, *Jefferson in Power* (Houghton Mifflin), depicts the death struggles of the Federalist party and defends the Jefferson Administration from certain aspersions of unfriendly critics. J. T. Adams, *The Living Jefferson* (Scribner), and C. M. Wiltse, *The Jefferson Tradition in American Democracy* (Univ. of North Carolina), are efforts to apply Jeffersonian doctrines to present problems.

More specialized political studies are A. B. Sageser, *The First of Two Decades of the Pendleton Act* (Univ. of Nebraska); G. M. Reynolds, *Machine Politics in New Orleans, 1897-1926* (Columbia); G. R. Poage, *Henry Clay and the Whig Party* (Univ. of North Carolina); and

W. D. Sheldon, *Populism in the Old Dominion: Virginia Farm Politics, 1885-1900* (Princeton).

CONSTITUTIONAL HISTORY

J. P. Selsam, *The Pennsylvania Constitution of 1776* (Univ. of Pennsylvania), is a very good monograph. The interest in the constitutional issue in the presidential campaign of the past year called forth a number of books most of which were popular in appeal, controversial in tone, and unimportant as permanent contributions. Typical of these works may be mentioned E. S. Bates, *The Story of Congress* (Harper) and *The Story of the Supreme Court* (Bobbs-Merrill); H. Lyon, *The Constitution and the Men Who Made It* (Houghton Mifflin); and F. Rodell, *Fifty-five Men* (Telegraph Press).

DIPLOMATIC HISTORY

S. F. Bemis, *A Diplomatic History of the United States* (Holt), is a general survey written from a background of wide research and complete understanding. E. H. Tatum, *The United States and Europe 1815-1823* (Univ. of California) offers an unorthodox explanation for the origin of the Monroe Doctrine. Other monographs in diplomatic history are J. D. P. Fuller, *The Movement for the Acquisition of All Mexico, 1846-1848* (Johns Hopkins); R. H. Fitzgibbon, *Cuba and the United States, 1900-1935* (George Banta); R. W. Paul, *The Abrogation of the Gentlemen's Agreement* (Harvard); and L. M. Case, ed., *French Opinion of the United States and Mexico* (Appleton-Century).

MILITARY AND NAVAL

J. G. Harbord, *The American Army in France in 1917-1919* (Little, Brown), is the narrative of an important war figure. T. S. Anderson, *The Command of the Howe Brothers during the American Revolution* (Oxford) is a thorough investigation. D. W. Knox, *A History of the United States Navy* (Putnam) is a general narrative.

SOCIAL HISTORY

The peace movement in the United States was studied by M. E. Curti, *Peace or War, 1636-1936* (Norton), a capable analysis of the impulses, arguments and technique of the movement, with cautious evaluation of its achievements and failures. Controversial aspects of labor history were studied in H. David, *The History of the Haymarket Affair* (Farrar and Rinehart), a voluminous work, and J. W. Coleman, *The Molly Maguire Riots* (Garrett and Massie).

The tercentennial celebration of Harvard College was the occasion for the publication of S. E. Morison, *Harvard College in the Seventeenth Century* (Harvard, 2 vols.) as part of the official history of the University and its place in American life. So distinguished is Morison's work in scope of subject matter, depth of research, and perfection of style, that it may fairly be said to be unexcelled among histories of universities. Morison also published *Three Centuries of Harvard, 1636-1936* (Harvard), a general survey. Published posthumously was W. L. Fleming, *Louisiana State University, 1860-1890* (Louisiana State Univ.), which describes the institution's trials in war and reconstruction and its heroic recovery. Other institutional histories are H. M. Bullock, *A History of Emory University* (Parthenon) and O. J. Bond, *The Story of the Citadel* (Garrett and Massie). A book of value as synthesis is C. W. Dabney, *Universal Education in the South* (Univ. of North Carolina, vol. 1), dealing with the nineteenth century.

Miscellaneous social themes are described in D. C. McMurtrie, *A History of Printing in the United States* (Bowker); I. Kolodin, *The Metropolitan Opera, 1883-1935* (Oxford); H. B. Shafer, *The American Medical Profession, 1783-1850* (Columbia); H. W. Baehr, *The New York Tribune* (Dodd, Mead); and F. Cahn and V. Bary, *Welfare Activities of Federal, State and Local Governments in California, 1850-1934* (Univ. of California).

Important economic studies are W. B. Smith and A. H. Cole, *Fluctu-*

ations in American Business, 1790-1860 (Harvard), a work of great reference value, and J. Schafer, *The Social History of American Agriculture* (Macmillan).

COLONIAL HISTORY

S. E. Morison, *The Puritan Pronaos* (New York Univ.) is a series of lectures dealing with phases of the intellectual life of seventeenth century New England. R. F. Upton, *Revolutionary New Hampshire* (Dartmouth College), is a good general account. Two books valuable as sources are L. W. Labaree, ed., *Royal Instructions to British Colonial Governors, 1670-1776*, (Appleton-Century, 2 vols.) and L. S. Mayo, ed., *Hutchinson's History of Massachusetts Bay* (Harvard). Economic life of the colonies are studied in C. C. Crittenden, *The Commerce of North Carolina, 1763-1789* (Yale), and V. J. Wyckoff, *Tobacco Regulations in Colonial Maryland* (Johns Hopkins). M. Glasgow, *The Scotch Irish in Northern Ireland and in the American Colonies* (Putnam), is a careful study. J. M. Ives, *The Ark and the Dove* (Longmans, Green), deals with the early Catholics of Maryland. J. Dombrowski, *The Early Days of Christian Socialism in America* (Columbia), describes an experimental group in Georgia. J. T. Lanning, *The Diplomatic History of Georgia* (Univ. of North Carolina), discusses the involved situation in the early years of the eighteenth century. W. B. Kerr, *Bermuda and the American Revolution, 1760-1783* (Princeton), brings into the picture of the revolution the activities of a colony which remained loyal to the empire. Another phase of the revolution is studied in K. Sullivan, *Maryland and France, 1774-1789* (Univ. of Pennsylvania).

Various phases of the religious life of the colonies are treated in M. A. Gutstein, *The Story of the Jews of Newport* (Bloch); Sister Mary Augustina (Ray), *American Opinion of Roman Catholicism in the Eighteenth Century* (Columbia); T. F. Meehan, *Historical Records and Studies* (U. S. Cath. Hist. Soc.); and Sis-

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ter Mary Doris Mulvey, *French Catholic Missionaries in the Present United States, 1604-1791* (Cath. Univ. of Amer.).

REGIONAL STUDIES

The South.—H. W. Odum, *Southern Regions of the United States* (Univ. of North Carolina), while dealing primarily with contemporary conditions, has great value for the historian. A. F. Raper, *Preface to Peasantry* (Univ. of North Carolina), by detailed investigation of two black belt counties illuminates the general problem of tenancy. F. B. Simkins and J. W. Patton, *The Women of the Confederacy* (Garrett and Massie) is a much needed book competently describing the activities and evaluating the influence of Southern women in the civil war. T. C. Johnson, Jr., *Scientific Interests in the Old South* (Appleton-Century) adds an important element to the general picture of Southern culture. F. D. Clark, *A Pioneer Southern Railroad* (Univ. of North Carolina), describes the Southern division of the Illinois Central Railroad. R. S. Cotterill, *The Old South* (Clark) is a well-written and informative attempt at synthesis.

New England.—H. F. Wilson, *The Hill Country of New England* (Columbia), is an excellent reconstruction based upon extensive research of the social and economic life of the region for the years 1790 to 1830. Van Wyck Brooks, *The Flowering of New England* (Dutton), is a vividly written description of the life which produced the literary figures of New England's golden age.

The West.—H. C. Hubbart, *The Older Middle West, 1840-1880* (Appleton-Century), is general in scope. Grant Foreman, *Indians and Pioneers* (Univ. of Oklahoma), studies the Southwest before 1830. E. Sheldon, *Land Systems and Land Policies in Nebraska* (Nebraska State Historical Society), is specialized. Romantic phases of western history receive treatment in O. O. Winther, *Express and Stagecoach Days in California* (Stanford); N. C. Wilson, *Treasure*

Express (Macmillan), dealing with the early days of Wells Fargo; F. B. Streeter, *Prairie Trails and Cow Towns* (Chapman and Grimes); and H. P. Beers, *The Western Military Frontier, 1815-1846* (published by the author).

STATE HISTORY

Texas.—The Texas centennial was the occasion for the publication of many popular works among which may be mentioned N. Beasley, *Texas* (Doubleday, Doran); H. R. Driggs and S. S. King, *Rise of the Lone Star* (Stokes); and P. Molyneux, *The Romantic History of Texas* (Cordova). The Polish contribution is described in E. J. Dworacyk, *The First Polish Colonies in Texas*, and M. Haiman, *The Poles in the Early History of Texas* (Polish Roman Catholic Union of America). C. E. Castaneda, *The Mission Era, 1519-1731* (Von Boeckmann-Jones, 2 vols.), constitute the first two volumes of a projected seven-volume history of *Our Catholic Heritage in Texas, 1519-1936*, under the auspices of the Knights of Columbus of Texas. Also devoted to early religious history is E. W. Heusinger, *Early Explorations and Mission Establishments in Texas* (Naylor).

Other States.—Other state histories to appear were Carl Carmer, *Listen for the Lonesome Drum* (Farrar and Rinehart) a reconstruction of life in New York State a century ago; E. M. Mack, *Nevada; a History of the State from the Earliest Times through the Civil War* (Clark); C. H. Carey, *A General History of Oregon prior to 1861* (Metropolitan); J. A. Hellenthal, *The Alaska Melodrama* (Liveright).

LOCAL HISTORY

Various localities were the subject of the following books: H. Asbury, *The French Quarter: an Informal History of the New Orleans Underworld* (Kopf); F. W. Atkinson, *The Argonauts of 1769* (Pajaronian), descriptive of early San Diego and Monterey; H. Boley, *Lexington in*

Old Virginia (Garrett and Massie); F. C. Chabot, *San Diego and its Beginnings* (Artes Graficas); H. B. Hough, *Martha's Vineyard, 1835-1935* (Tuttle); E. H. Danenberg, *The Story of Bridgeport* (Bridgeport Centennial Inc.); and G. Porte-Bobinski and C. M. Smith, *Natchitoches* (Dameron-Pierson).

CANADA AND LATIN AMERICA

G. N. Tucker studies a phase of Canadian history in *The Canadian Commercial Revolution, 1845-1851* (Yale). The following works testify to the continued vigor of American scholarship in the field of Latin American history: E. L. Hewett, *Ancient Life in Mexico and Central America* (Bobbs-Merrill); F. Blom, *The Conquest of Yucatan* (Houghton Mifflin); A. C. Wilgus, ed., *Colonial Hispanic America* (George Washington Univ.), a collection of lectures; J. F. Rippey and J. T. Nelson, *Crusaders of the Jungle* (Univ. of North Carolina), a study of frontier missions of tropical South America during the colonial period; C. L. Jones, *The Caribbean since 1900* (Prentice-Hall); and H. P. Davis, *Black Democracy* (Dodge), a study of Haiti.

EUROPE

F. G. Moore, *The Roman's World* (Columbia) is an excellent picture of the social and cultural life of ancient Rome. Studies of imperial administration are A. D. Winspear and L. K. Geweke, *Augustus and the Reconstruction of Roman Government and Society* (Univ. of Wisconsin), and A. C. Johnson, *Roman Egypt to the Reign of Diocletian* (Johns Hopkins).

Ferdinand Schevill, *History of Florence* (Harcourt, Brace), traces the city's story from its beginning through the Renaissance. J. L. La Monte, *The Wars of Frederick II against the Ibelins in Syria and Cyprus* (Columbia), is a translation of the memoirs of Philip De Novare. The crusades receive further study in M. W. Baldwin, *Raymond III of Tripolis and the Fall of Jerusalem*

(Princeton). An institutional investigation is E. G. Kimball, *Serjeanty Tenure in Medieval England* (Yale).

Conyers Read, *The Tudors* (Holt), is a readable and authoritative sketch. W. K. Jordan continues his definitive study of toleration in England by publishing *The Development of Toleration in England* from the Accession of James I to the Convention of the Long Parliament (Allen and Unwin).

Various phases of European history were treated in W. T. Laprade, *Public Opinion and Politics in Eighteenth Century England* (Macmillan); P. Russell, *The Glittering Century* (Scribner); A. M. Wilson, *French Foreign Policy during the Administration of Cardinal Fleury, 1726-1743* (Harvard); M. B. Garrett, *The Estates General of 1789* (Appleton-Century); C. Brinton, *French Revolutionary Legislation on Illegitimacy, 1789-1804* (Harvard); George Vernadsky, *Political and Diplomatic History of Russia* (Little, Brown); T. Jorgenson, *Norway's Relation to Scandinavian Unionism, 1815-1871* (St. Olaf College); H. H. Frost, *The Battle of Jutland* (U. S. Naval Institute); D. Harris, *A Diplomatic History of the Balkan Crisis of 1875-1878* (Stanford); and R. J. Kerner and H. N. Howard, *The Balkan Conferences and the Balkan Entente, 1930-1935* (Univ. of California).

ASIA

G. N. Steiger, *A History of the Far East* (Ginn) is a general survey. J. G. Reid, *The Manchu Abdication and the Powers, 1908-1912* (Univ. of California) is detailed in treatment. G. G. Cameron, *History of Early Iran* (Univ. of Chicago), is a work of scholarship.

TESTIMONIAL VOLUMES

Two volumes of essays written by former students in honor of a former teacher appeared: A. Craven, ed., *Essays in Honor of William E. Dodd* (Univ. of Chicago); and D. C. McKay, ed., *Essays in the History of Modern Europe* (Harper), in honor of W. L. Langer.

XXV. LITERATURE AND LANGUAGE

BIOGRAPHY

BY MALCOLM O. YOUNG

REFERENCE LIBRARIAN, PRINCETON UNIVERSITY

GENERAL

Although the number of biographical works published in 1936 did not quite reach the proportions of some recent years, the subject is a very live one. In May, before the American Library Association, Douglas E. Freeman, winner of the Pulitzer prize in biography, 1935, decried the influence of Lytton Strachey, thereby calling forth an excellent editorial in *The New York Times* of May 24. This was a defense of Strachey, and pointed out that Strachey's imitators were at fault, not the pioneer, in the new school of biographical writing. Another comment in the same field was in the *Times* on June 14, provoked by various adverse criticisms of the autobiography of John Middleton Murry. Both these articles are valuable in defining modern biography. The Pulitzer prize winner, Ralph Barton Perry, upheld in his two-volume work on William James (Little, Brown) the high standard, almost never questioned in this particular class.

COLLECTIVE WORKS

A useful compilation is *Who's Who in Commerce and Industry* (Institute for Research in Biography N. Y.). A background book is Albert Britt's *The Great Biographers* (McGraw-Hill). A posthumous work is *Elizabethan Women* (Houghton) by Gamaliel Bradford. Darwin Linnaeus, Audubon, Fabre, are among those in Donald C. Peattie's *Green Laurels; the Lives and Achievements of the Great Naturalists* (Simon & Schuster). Arthur D. H. Smith's *Men Who Run America* (Bobbs-Merrill) consists of 30 sketches of living men, mostly capitalists. Two other books, in this class, are Joseph M. M. Gray's *Prophets of the Soul*, on American divines (Abington), and Joseph Cottle's *Champions of Democracy* (Little, Brown).

PRESIDENTS

The Washington collection was increased by at least three volumes: Emily S. Whiteley's *Washington and his Aides-de-Camp* (Macmillan); *Washington in the West* by Charles H. Ambler (Univ. of North Carolina Press), and *The Soul of George Washington*, by Joseph Buffington (Dorrance). Two of our foremost political biographers, James Truslow Adams and Claude G. Bowers, have written on Jefferson, the former's book entitled *The Living Jefferson* (Scribner), making a political document; and the latter *Jefferson in Power*, a continuation of a former work (Houghton). The Lincoln bibliography, ever increasing, included *Lawyer Lincoln* (Houghton) by A. A. Woldman; *Lincoln, 1847-1853*, a day by day record by B. P. Thomas (Springfield, Ill., Lincoln Assn.); *Lincoln in the Political Circus*, by Blaine G. Gernor, and *Lincoln Group Papers* (a collection of addresses of aspects of the subject), edited by Douglas C. McMurtrie (Chicago, Black Cat Press). The later years of Grant were the background of a work by Horace Green (Scribner). William Allen White's *A Puritan in Babylon* (Macmillan) deals with Coolidge. To be recorded here, too, is *The Roosevelt Family in America* (Hillman-Curl).

STATESMEN AND MILITARY LEADERS

"Imperial Idealist" is the sub-title of Amos A. Ettinger's life of James Edward Oglethorpe (Oxford), founder of Georgia. Probably the best biography yet written of Samuel Adams is John C. Millers *Sam Adams, Pioneer in Propaganda* (Little, Brown). J. Bennett Nolan's *General Benjamin Franklin* (Univ. of Pennsylvania Press) and V. W. Crane's *Benjamin Franklin, Englishman and American* (Williams and Wilkins) added to a long list of books on this

BIOGRAPHY

subject. Two books appeared on Chief Justice Roger B. Taney, one by Carl B. Swisher (Macmillan), the other by Charles W. Smith, Jr. (Univ. of North Carolina Press). George R. Poage's *Henry Clay and the Whig Party* (Univ. of North Carolina Press) covers 1840-50. *The Cast-Iron Man: John C. Calhoun and American Democracy* (Longmans) is by Arthur Styron. A life of John Cabell Breckinridge is by Lucille Stillwell (Caxton Press). The prolific and leading biographer, Allan Nevins, has written *Hamilton Fish: the Inner History of the Grant Administration* (Dodd) an outstanding work. Nevins has also edited the two-volume *Letters and Journal of Brand Whitlock* (Appleton-Century). Another biography of William Jennings Bryan is by Wayne C. Williams (Putnam). *Borah of Idaho*, by Claudius O. Johnson (Longmans) attempts an analysis of a sometimes puzzling individual. A fairly popular life of Brandeis is by Alfred Lief (Stackpole, N. Y.). Reminiscences of over 40 years in Congress are in *As I Knew Them* by James E. Watson (Bobbs-Merrill). The year, of course, had its crop of campaign biographies: Frederick Palmer's *This Man Landon* (Dodd, Mead); Richard B. Fowler's *Alfred M. Landon* (Page); Norman Beasley's *Frank Knox, American* (Double-day, Doran). *James Longstreet, Lee's War Horse*, by H. J. Eckenrode and Bryan Conrad (Univ. of North Carolina), and William Mitchell's *General Greeley*, were the outstanding biographies of military figures.

THINKERS AND SPIRITUAL LEADERS

The former President of Harvard, A. Lawrence Lowell, wrote the biography of his astronomer brother, Percival Lowell (Macmillan). The first dean of women at the University of Chicago, Marion Talbot, wrote her reminiscences *More than Lore* (Univ. of Chicago Press). "*Bott,*" the *Story of a Schoolmaster*, by W. H. Husted (Coward-McCann), contains tributes by several celebrities to the late headmaster of Lawrenceville School. The sociologist, Edward Alsworth

Ross, has called his autobiography *Seventy Years of It* (Appleton-Century). Granville Hicks has produced a portrayal of John Reed (Macmillan) whose body lies in the Kremlin. Another radical, Joseph Freeman, has traced his own progress in *An American Testament* (Farrar and Rinehart). An independent thinker of the last century, Theodore Parker, is the subject of a work by Henry S. Commager (Little, Brown). The second recent book on Francisco Kino, pioneer missionary on the Pacific Coast, is by Herbert E. Bolton (Macmillan). A pastor of wide interests, Charles S. Macfarland, gathers his memories in *Across the Years* (Macmillan). Quite different individuals are Billy Sunday, whose life is by William T. Ellis (Winston) and the influential negro of the moment, Father Divine, the unusual title of whose biography is *God in a Rolls Royce* (Hillman-Curl), written by John Hoshor.

THE FRONTIER

The outstandingly long list of biographies, with pioneer life of one sort or another as basis, begins with *Sutter's Own Story*, by Erwin G. Gudde (Putnam) with its early California setting. *Pioneer of Old Oregon: Henry Harmon Spalding* (Caxton Press) is by Clifford M. Drury. *The Real Billy the Kid* (R. R. Wilson) by Miguel A. Otero, and *Sam Bass*, by Wayne Gard (Houghton) are based on two desperadoes. Edward Van Every has written of *Joe Louis, Super-fighter* (Stokes), while Woodworth Clum's *Apache Agent* (Houghton) is the story of John P. Clum. A famous guide in the Southwest is the subject of Alpheus H. Favour's *Old Bill Williams* (Univ. of North Carolina). The Southwest is also the background of *Lane of Llano, being the Story of Jim (Lane) Cook, as told to T. M. Pearce* (Little, Brown). Two books related in interest are J. Evetts Haley's *Charles Goodnight, Cowman and Plainsman* (Houghton), and Charles A. Guernsey's reminiscences, entitled *Wyoming Cowboy Days* (Putnam). Others in this section are Owen P.

White's *My Texas 'Tis of Thee* (Putnam); Cyrenus Cole's *I Remember, I Remember* (Ia. City, Ia. Historical Soc.); Charles S. Walgamotts *Six Decades Back*, frontier Idaho (Caxton Press). Also, Robert C. Johnson's *John McCloughlin, Patriarch of the Northwest* (Portland, Ore., Metropolitan Press), and John H. Evan's *Charles Coulson Rich* (Macmillan), in which the early history of the Mormons plays a large part; Evan G. Barnard's Autobiography, with the title, *A Rider of the Cherokee Strip* (Houghton).

LITERARY FIGURES

The earliest subject of a biography in the general section of letters is John Trumbull, Connecticut wit (Univ. of North Carolina Press), about whom Alexander Cowie has written. Two works appeared on America's great lexicographer, Noah Webster, one by Harry R. Warfel (Macmillan), the other by Ervin C. Shoemaker (Columbia Univ. Press). The International Mark Twain Society (Webster Groves, Mo.) has produced another literary biography, by Cyril Clemens, this of Petroleum Vesuvius Nasby. The biography of the poet, ambassador, traveler, Bayard Taylor, has been written by Richmond C. Beatty (Univ. of Oklahoma Press). Another biography of Sidney Lanier is by Lincoln Lorenz (Coward-McCann). New light on O. Henry is found in William W. Williams' *The Quiet Lodger of Irving Place* (Dutton). The negro poet, Paul Lawrence Dunbar, is portrayed by Benjamin Brawley (Univ. of North Carolina). A group of autobiographies, illuminating both individuals and period, are *Threescore*, *Autobiography of Sarah N. Cleghorn*, poet, pacifist, reformer, (Smith-Haas); Clement Wood's *Glory Road* (Poet's Press, N. Y.); Edgar Lee Master's *Across Spoon River* (Farrar and Rinehart); Carl Van Doren's *Three Worlds* (Harper). Laura Richard has written a small volume *E.A.R.*, on Robinson (Harvard Univ. Press). *Edna St. Vincent Millay and her Times* (Univ. of Chicago), is by Elizabeth Atkins.

THE PRESS

Three biographies of William Randolph Hearst appeared during the year. The one by Mrs. Fremont Older (Appleton-Century) is adulatory, while those by Oliver Carlson (Viking) and Ferdinand Lunberg (Equinox Cooperative Press, N. Y.) are critical. Elizabeth Dunbar has written of the varied life of Talcott Williams (G. E. Stechert), the subtitle of the book being *Gentleman of the Font Estate*. *Fremont Older* by Evelyn Wells (Appleton-Century) gives us light on California newspapers. A fascinating autobiography is of a reporter, Mary Doyle, entitled *Life Was Like That* (Houghton). A combination of publicity and circus is in *This Way to the Big Show*, by the press agent, Dexter W. Fellows, and Andrew A. Freeman (Viking).

THE BUSINESS WORLD

The colonial merchant, Jeremiah Dummer, is recalled by Hermann F. Clarke and H. F. Foote (Houghton Mifflin). The volume covering the years 1856-1884 in the life of Cyrus Hall McCormick has appeared, by William T. Hutchinson (Appleton-Century). *The Man Who Built San Francisco* (Macmillan) is the life of William Chapman Ralston, by Julian Dana. *Edmund Niles Huyck, the Story of a Liberal* (Dodd, Mead) is another industrialist's life by Francis Brown. *Jay Cooke; Private Banker* (Harvard Univ. Press), by Henrietta M. Larson, sheds light on his period. *John D. Archbold and the Standard Oil Company* (Macmillan), is by A. J. Moore, and the life of Robert Brookings, merchant and the founder of Brookings Institute, is recorded by Hermann Hagedorn (Macmillan).

ARTISTS

Alphaeus P. and Margaret W. Coe have produced a work on Timothy Cole (Pioneer Associates, N. Y.). Two architects form subjects of notable books: *H. H. Richardson*, by Henry R. Hitchcock, Jr. (Museum of Modern Art, N. Y.), and Ralph Adams Cram, in his *My Life in Architecture* (Little, Brown). A much illustrated volume is Fairfax

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Downey's *Portrait of an Era: As Drawn by Charles Dana Gibson* (Scribner). The sculptress, Malvina Hoffman, has an entertaining and attractively illustrated autobiography, *Heads and Tales* (Scribner). The naturalist and artist, Audubon, is again the subject of a first-rate volume, this by Constance Rourke (Harcourt). The composer, Stephen Foster, is portrayed by Raymond Walters (Princeton Univ. Press). An apt title belongs to the autobiographical *Daniel Frohman Present* (Kendall & Sharp). The photographer-artist, Arnold Genthe, has an entertaining autobiography, *As I Remember* (Reynal & Hitchcock).

WOMEN

The daughter of Thomas Hart Benton and wife of John C. Fremont, Jessie Benton Fremont (Nash, San Francisco), is the subject of a work full of action by Catherine C. Phillips. *Ellen Ewing, Wife of General Sherman*, by Anna McAllister (Benziger, Cincinnati) is the story of the wife of another man of action. *Father Struck it Rich* (Little, Brown), by Evalyn Walsh McLean, is a volume of self-revelation. A colored woman of the servant class, Juanita Harrison, has given us a naively interesting book, *My Great, Wide, Beautiful World* (Macmillan). Belinda Jelffe, who rose by her own efforts from the poorest of the mountain whites, calls her autobiography *For Dear Life* (Scribner). One who has written much and who has taken an active part in labor and social matters, Mary Heaton Vorse, has given her autobiography the title *A Footnote to Folly* (Farrar and Rinehart).

FOREIGN SUBJECTS

Seldom has there been a longer list of American written biographical works with foreign subjects. Only the outstanding ones can be enumerated here: *Herod*, by Jacob S. Minkin (Macmillan); *Christopher Columbus*, by H. H. Houben (Dutton); *Ignatius Loyola*, by Robert Harvey (Bruce, Milwaukee); *Diane the Huntress*, de Portiers, by Grace

H. Seely (Appleton); *Jean, Baron de Batz*, Marie Antoinette's henchman, by Meade Minnigerode (Farrar and Rinehart); *Saint Among Savages*, the Jesuit, Isaac Jogues, by Francis Talbot (Harper); *Saint-Just*, by Eugene N. Curtis (Columbia Univ. Press); *The Lives of Talleyrand*, by Crane Brinton (Norton); *Antoine Lavoisier, the Father of Modern Chemistry* (Lippincott); *The Career of Theophile Delcasse*, by Charles W. Porter (Univ. of Pennsylvania Press); *Jean Jaures*, by Harold R. Weinstein (Columbia Univ. Press); *Queen of Hearts: the Passionate Pilgrimage of Lola Montez*, by Isaac Goldberg (Day). Also in the list are *Ludwig Tieck, the German Romanticist*, by Edwin H. Zeydel (Princeton Univ. Press); *Thomas De Quincey*, by Horace A. Eaton (Oxford); *Samuel Richardson*, by Alan D. McKillop (Univ. of North Carolina); George Berkeley, by John Wild (Harvard University Press); *Boz: an Intimate Biography*, by Joseph C. Boorman and J. L. Harte (Stratford); *George Eliot*, by Blanche C. Williams (Macmillan). Outstanding is the two-volume work, *Lord Palmerston*, by Herbert C. F. Bell (Longmans). A miscellaneous group includes *Togo*, by Edwin A. Falk (Longmans); *Kagawa*, by Margaret Baumann (Macmillan); *Lenin*, by William C. White (Smith & Haas); *Pilsudski*, by Grace Humphrey (Scott and More); and *Gomez, Tyrant of the Andes*, by Thomas Rourke (Morrow).

MISCELLANEOUS

Daniel Sargent has written of a little known character, Catherine Tekakwitha, first Indian saint (Longmans). Another Indian subject is Samson Occom, whose life is written by Harold Blodgett (Dartmouth College). The second recent biography of the subject is Herbert E. Putnam's *Joel Roberts Poinsett* (Burlington, Vt., author). The best biography yet published on the discoverer is William H. Hobbs' *Peary* (Macmillan). Hiram Percy Maxim has written a small but entertaining volume, *A Genius in the Family: Sir Hiram*

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Stevens Maxim through a Small Son's Eyes (Harper). A best seller is Victor Heiser's autobiographical, *An American Doctor's Odyssey* (Norton). Another physician is found in Edith G. Reid's *Life and Convictions* of William Sydney Thayer (Oxford). A compilation by W. H. Payne and J. G. Lyons is *Folks Say of Will Rogers* (Putnam). Very timely is Cecil Carnes' *John L. Lewis, Leader of Labor* (Speller).

TRAVEL

BY ELIZABETH T. PLATT

AMERICAN GEOGRAPHICAL SOCIETY

AUTOBIOGRAPHICAL

In both number and quality travel books for the year have been especially strong in those covering a broad territory and dealing with more than one special voyage. This is well illustrated in the number of autobiographical works of foreign correspondents. Negley Farson's *Way of a Transgressor* (Harcourt, Brace), John Gunther's *Inside Europe* (Harper), Webb Miller's *I Found No Peace: The Journal of a Foreign Correspondent* (Simon & Schuster) and M. W. Vaughn's *Covering the Far East* (Covici-Friede) are all of exceptional interest. Also among the autobiographies of interest from the travel point of view are G. M. Sutton's *Birds in the Wilderness: Adventures of an Ornithologist* (Macmillan) and *Heads and Tales* (Scribner's) in which Malvina Hoffman describes her adventures and experiences in "head-hunting" in the near and far corners of the earth in search of racial types which she modelled for her "Hall of Man" in the Field Museum, Chicago. Also describing work which was in part for the Field Museum is J. E. Williamson's *Twenty Years under the Sea* (Hale, Cushman & Flint) in which the author tells of his work in the development of undersea photography. Thomas Henry Huxley's *Journal*, kept when he was serving as assistant surgeon and naturalist on the *Rattlesnake* which left England in 1846 not to return until 1850, has been edited by his grandson Julian Huxley and published under the title *T. H. Huxley's Diary of the Voyage of H. M. S. Rattlesnake* (Doubleday, Doran). South

America, South Africa and Mauritius were visited but the work was primarily centered in Australian waters in and about the Great Barrier Reef. Victor Heiser's *An American Doctor's Odyssey: Adventures in Forty-Five Countries* (Norton) is largely the record of Dr. Heiser's work, 20 years of which were spent in the service of the Rockefeller Foundation. "The story of one man's spiritual odyssey" which took him across the Alps, through Italy, into African deserts and mountains and on to India is told in Maarten Matisse's *Wanderer from Sea to Sea* (Harcourt, Brace). Lester Cohen's *Two Worlds* (Covici-Friede) deals with the author's travels to study fascism in England, the regimentation of the individual under communism and conditions of the people in Turkey and India. Two amusing travel tales are *Around the World in Eleven Years* (Stokes), by Patience, Richard, and John Abbe and Juanita Harrison's *My Great, Wide, Beautiful World* (Macmillan).

AMERICA

Desolate Marches: Travels in the Orinoco Llanos of Venezuela (Harcourt, Brace) tells of the experiences of L. M. Nesbitt when he undertook a survey for a petroleum company in north-eastern Venezuela in 1927. W. A. Robinson's *Voyage to Galápagos* (Harcourt, Brace) is the record made in a small vessel with the author's wife and one other companion. Heath Bowman and Stirling Dickinson have issued jointly two volumes illustrated by block prints: *Mexican Odyssey* (Willetts Clark)

and *Westward from Rio* (Willet Clark). Also dealing with Mexico is J. H. Jackson's *Mexican Interlude* (Macmillan) which tells of a trip over the new Pan American Highway to Mexico City. E. A. Powell has written *Aerial Odyssey: Cuba, Haiti, Dominican Republic, Porto Rico, Virgin Islands, the Lesser Antilles, Trinidad, the Guianas, Venezuela, Colombia, Panama, Costa Rica, Nicaragua, Salvador, Honduras, Guatemala, and Mexico* (Macmillan). A new edition is available of L. J. Burpee's *The Search for the Western Sea: the Story of the Exploration of North-Western America* (Macmillan) and H. E. Bolton's *Rim of Christendom* (Macmillan) is the story of Father Kino's work and travels in the South-west.

EUROPE

Especially welcome because the literature in English on these regions is not particularly abundant are Agnes Rothery's latest volume *Finland, the New Nation* (Viking) and Rodney Gallop's *Portugal: A Book of Folk Ways* (Cambridge: Macmillan), based on first hand observation. Mary Ellen Chase has written entertainingly of her English experiences in *This England* (Macmillan).

AFRICA

Gari-Gari: The Call of the African Wilderness (Holt) is H. A. Bernatzik's record of a journey for the most part along the White Nile in the Anglo-Egyptian Sudan to photograph the natives—the Shilluk, Dinka and Nuer peoples. Dealing with the region a little further west is Richard Wyndham's *The Gentle Savage: A Sudanese Journey in the Province of Bahr-el-Ghazal, Commonly Called "The Bog"* (Morrow). It is the impressions of an artist and is chiefly devoted to the Dinkas. L. A. Fuertes' and W. H. Osgood's *Artist and Naturalist in Ethiopia* (Doubleday, Doran) is the concurrent diaries of the two authors kept on the Field Museum-Chicago Daily News Ethiopian Expedition, 1926-27. It is illustrated with colored reproductions of Fuertes paintings. H. E. Winlock,

of the Metropolitan Museum of Art, tells of a "journey of a past age . . . Today . . . a matter of a few hours in a motor or of minutes by plane" from el Khargeh oasis to ed Dākhleh oasis in the Libyan Desert and gives archaeological information and details in regard to ancient caravan routes in *Ed Dākhleh Oasis: Journal of a Camel Trip Made in 1908* (Metropolitan). Grace Crile, the wife of Dr. George Crile, tells of a flight to the Rift Valley in *Skyways to a Jungle Laboratory: An African Adventure* (Norton). F. G. Carnochan and H. C. Adamson's *Out of Africa* (Dodge) is based on the observations of Carnochan made to "convey a picture of a vanished Africa as seen with a black man's eyes." It is essentially the life story of the head of the Snake Guild in west Tanganyika. M. L. J. Akeley's *Restless Jungle* (McBride) is an account of Mrs. Akeley's 1935-36 African expedition to South Africa, the Transvaal, Natal, Zululand, Swaziland and Portuguese East Africa. L. M. Nesbitt's *Gold Fever* (Harcourt, Brace) is an autobiographical account of experiences in the gold and diamond mines of the South African Rand. Graham Greene's *Journey Without Maps* (Doubleday, Doran) is the record of a journey on foot through Liberia. *Three-Wheeling Through Africa* (Bobbs-Merrill) by James C. Wilson is an account of a trip made by motor-cycle across Africa from Nigeria to Eritrea.

ASIA

Freya Stark's *The Southern Gates of Arabia: A Journey in the Hadhramaut* (Dutton) is the work of a keen and sympathetic observer describing a journey into south-eastern Arabia, one of the objectives of which was a study of incense routes. Also dealing with the Hadhramaut is Hans Helfritz' *Land without Shade* (McBride). Caroline Singer and C. L. Baldridge have collaborated in the artistic production of *Half the World is Isfahan* (Oxford Univ. Press). Peter Fleming's *News from Tartary: A Journey from Peking to Kashmir* (Scribner) is the story of a

seven-months' trip across China from Peking through Sinkiang to India to study conditions, especially political, in this remote and little traveled region. *The Clear Mirror: A Pattern of Life in Goa and in Indian Tibet* (Cambridge: Macmillan) records the impressions of G. E. Hutchinson, biologist of the Yale North India Expedition. On the region about India, Gordon Sinclair, correspondent on the *Toronto Star*, has written *Khyber Caravan: Through Kashmir, Waziristan, Afghanistan, Baluchistan and Northern India* (Farrar and Rinehart). H. V. Morton's *In the Steps of St. Paul* (Dodd, Mead) follows the journeys of the Apostle in the eastern Mediterranean region, and a journey to the Holy Land is described by Beverley Nichols in *No Place Like Home* (Doubleday, Doran).

THE PACIFIC

W. S. Grooch's *Skyway to Asia* (Longmans, Green) is an account of the expedition sent out by the Pan American Airways to establish commercial air-bases in the Pacific as a foundation for the trans-Pacific aviation service. It is the story of the *China Clipper*. In *Central Australia* (Oxford Univ. Press) C. T. Madigan describes his investigations on foot, by camel, automobile, and airplane of the desert heart of Australia, the MacDonnell Ranges and Lake Eyre between 1927 and 1932. H. L. Shapiro's *The Heritage of the Bounty: The Story of Pitcairn Through Six Generations* (Simon and Schuster) tells of ten days on the

Templeton-Crocker Expedition of 1934 in which the author was able to study the "heredity of the hybrid Anglo-Polynesian children of the Bounty" at first-hand. J. G. Hides' *Savage Patrol* (McBride) is the adventures of an officer of the British government in Papua, and C. N. Taylor's *Odyssey of the Islands* (Scribner) endeavors to present a picture of native life in "what might be termed the Unknown Philippines." Geoffrey Gorer has written of *Bali and Angkor: or, Looking at Life and Death* (Little, Brown).

BIBLIOGRAPHIES

E. G. Cox. *A Reference Guide to the Literature of Travel: Including Voyages, Geographical Descriptions, Adventures, Shipwrecks and Expeditions. Vol. I. The Old World* (Univ. of Washington Publ. in Language and Literature. IX. 1935) is an endeavor to "list in chronological order, from the earliest date ascertainable down to and including the year 1800, all the books on foreign travels, voyages, and descriptions printed in Great Britain, together with translations from foreign tongues and Continental renderings of English works." F. H. Curtiss, *A Little Book on Travel Books* (privately printed), attempts to "call to the attention of a prospective traveler a few books pertaining to each country. Novels, books of travel, and classics that might not be thought of in connection with any particular country" are included.

CRITICISM AND BELLES LETTRES

CRITICISM AND BELLES LETTRES

By PETER MONRO JACK

CRITIC AND LECTURER

GENERAL LITERATURE

The most important criticism of the year has probably been Van Wyck Brooks' *The Flowering of New England, 1815-1865* (Dutton). This is an exhaustive description of the intellectual climate of New England as it is variously seen in Ticknor, Everett, Prescott, Lowell, Holmes, Emerson, Thoreau, Margaret Fuller, and Hawthorne, especially in its romantic, transcendental, and mystical aspects. It is the first of a series in which Mr. Brooks promises "to sketch the literary history of the United States." A useful book is *The Concept of Nature in Nineteenth-Century English Poetry* (Macmillan) in which Joseph Warren Beach shows how nature took the place of religion, until it finally dwindled in the 20th century. *The Decline and Fall of the Romantic Ideal* by F. L. Lucas (Macmillan) is a definition and revision of the romantic spirit in every literary age, with useful chapters on romantic criticism. Albert Guérard's *Art For Art's Sake* (Lothrop, Lee) is a history of the theory through the ages; while George Plekhanov's *Art and Society* (Critics' Group) expounds the Marxian theory of social determinism. An unusual volume is *The English Novelists* by Derek Verschoyle (Harcourt, Brace), a general history and criticism of the English novel, with papers by various contemporary novelists: Sean O'Faolain on Dickens and Thackeray, H. E. Bates on Hardy and Conrad, E. F. Benson on the Brontës, L. A. G. Strong on Joyce, etc. *The Metaphysical Poets* by Helen C. White (Macmillan) is a competent study, especially of religious experience in the seventeenth century. *The School of Femininity* by Margaret Lawrence (Stokes) is a book for and about women as they are interpreted through feminine writers from Mary Wollstonecraft to Virginia Woolf.

Chard Powers Smith's *Annals of the Poets* is anecdotal.

CRITICAL BIOGRAPHY

The Mind and Art of Jonathan Swift by Richard Quintana (Oxford Univ. Press) is especially good on the social and political environment influencing Swift. Horace Ainsworth Eaton's *Thomas de Quincey* (Oxford) is mainly biographical, while Edward Sackville West's *Thomas de Quincey: His Life and Work* (Yale) is a remarkable psychological interpretation. *A Walk After Keats* by Nelson S. Bushnell (Farrar & Rinehart) narrates a pilgrimage through Northern England and Scotland, following Keats' letters. Some parallels with Keats are to be found in Frank Lester Pleadwell's *The Life and Works of Joseph Rodman Drake* (Merrymount Press), a minor poet of the early 19th century. Shelley's radical thinking is the chief interest of Carl Grabo's *The Magic Plant* (Univ. of North Carolina). Newton Dillaway has written of Emerson and the problems of his day in *Emerson, Prophet of America* (Little, Brown), but one of the best books on Emerson is Townsend Scudder's *The Lonely Wayfaring Man* (Oxford), which describes Emerson's relations with the chief English writers of his time, particularly Carlyle.

May Morris's *William Morris* (Blackwell) tells the story of Morris as artist, writer, and socialist, and has a preface by G. B. Shaw on "William Morris as I Knew Him." An excellent book on Wilde is *Oscar Wilde Discovers America* by Lloyd Lewis and Justin Smith (Harcourt, Brace), recovering the public literary life of 1882, with copious illustrations. A book that adds little to our knowledge is Vincent O'Sullivan's *Aspects of Wilde* (Holt), designed to clear up the obscurity of Wilde's last years, with a preface by Shaw. For those who enjoyed *Stalky*

& Co., C. G. Beresford, who was M'Turk, has written his reminiscences, *Schooldays With Kipling* (Putnam's). Joseph Hone has written the *Life of George Moore* (Macmillan), about which there was so much controversy. Moore had wanted Charles Morgan to write the book, but the executors of the estate gave the papers to Hone, who has done an exemplary book. With the publication of A. E. Housman's *More Poems* appeared a slight but valuable book by A. S. F. Gow (Macmillan) called *A. E. Housman, A Sketch*, with a list of Housman's writings and indexes to his classical papers.

LITERARY AUTOBIOGRAPHY

Here the event of the year was the complete edition of *Boswell's Journal of a Tour to the Hebrides with Samuel Johnson*, from the newly discovered manuscripts edited by Frederick Pottle and Charles Bennett (Viking Press). Carl Van Doren's *Three Worlds* (Harper) is particularly interesting for its portraits of literary contemporaries, including Sinclair Lewis and Elinor Wylie. Further critical and anecdotal material is found in the autobiographies of Edgar Lee Masters (*Across Spoon River*), G. K. Chesterton, Siegfried Sassoon (*Sherston's Progress*), Frank Swinnerton, J. M. Murry (*Between Two Worlds*), James Branch Cabell's *Preface to the Past*, Laurence Housman's *The Unexpected Years*, and A. S. W. Rosenbach's *A Book Hunter's Holiday*.

CRITICAL ESSAYS

Essays Ancient and Modern by T. S. Eliot (Harcourt, Brace), are some of the essays from the old *Forerunner* with some recent addresses, chiefly moral and religious, by Eliot. *Seven Years' Harvest* by Henry S. Canby (Farrar & Rinehart) presents a critical survey of contemporary literature, year by year, by the retiring editor of the *Saturday Review of Literature*. *Forays and Rebuttals*, by Bernard de Voto (Little, Brown), represents the critical attitude of the new editor in forthright debate. *Not Under Forty* by

Willa Cather (Knopf) recalls Flaubert's niece, Sarah Orne Jewett, and literary Boston of the last generation. Paul Elmer More's *On Being Human* (Princeton) is the third volume of the New Shelburne Essays, and, besides the essays on humanism, has several strictures on contemporary writers—Proust, Joyce, etc. *The Story of a Novel* by Thomas Wolfe (Scribner) is an account of the writing of *Look Homeward, Angel*, and *Of Time and the River*, by one of the more important younger novelists. *The Destructive Element* by Stephen Spender (Houghton, Mifflin) is a study of frustration in James, Eliot, Lawrence, etc. by the young English radical poet. New material has been found in the *Note-Books* of Gerard Manley Hopkins, (Oxford), chiefly sermons, journals, essays and annotations. Hilaire Belloc's *Selected Essays* (Lippincott) is compiled by John E. Dineen. The *Collected Papers and Essays* of Robert Bridges makes Vols. XXVII to XXIX of his complete works (Oxford). *After All* (Knopf) is a collection of recent and early essays by the late Clarence Day. *The Countryman's Year* (Doubleday, Doran) is David Grayson's account of the seasonal changes and H. E. Bates's *Through The Woods* (Macmillan) does similar service for the English woodland from April to April. The third and last volume of Montaigne's *Essays* has been published in a frank modern version by Jacob Zeitlin (Knopf).

MISCELLANEOUS

Max Eastman has written an amusing book *Enjoyment of Laughter* (Simon & Schuster) with the help of contemporary humorists who contributed material. Agnes Repplier's *In Pursuit of Laughter* (Houghton, Mifflin) treats of wit and humor historically in the author's usually crisp and felicitous vein. Ernest S. Bates has made a new version of *The Bible, Designed to be Read as Living Literature*, with additions from the Apocrypha (Simon & Schuster). Henry Williamson's *Salar the Salmon* (Little, Brown) is a remarkable book

ENGLISH LANGUAGE AND LITERATURE

both for sheer beauty of writing and as scientific description. D. H. Lawrence's miscellaneous work has been collected under the title *Phoenix*, edited, with an introduction, by Edward D. McDonald (Viking). Two

useful collections are *The Borzoi Reader*, edited by Carl Van Doren from 21 years of Knopf's publishing, and *The New Republic Anthology*, 1915-1935, edited by Groff Conklin (Dodge).

ENGLISH LANGUAGE AND LITERATURE

BY ALBERT CROLL BAUGH

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GENERAL

The present survey of American research in the field covered, like its predecessors, is selective. Many studies concerned with details too technical for the layman are omitted although they are often of considerable importance to the philologist and the literary historian. A complete list of such contributions will be found in the author's bibliography in the Supplement to the *Publications of the Modern Language Association (PMLA)*¹. The reader should also consult Hardin Craig's "Recent Literature of the English Renaissance" (*SP*), L. I. Bredvold's "English Literature, 1660-1800: A Current Bibliography" (*PQ*), and the "Victorian Bibliography" (*MP*) compiled by the Victorian research group of the Modern Language Association, all of which except the first include foreign as well as American work.

THE ENGLISH LANGUAGE

A comprehensive study of *Tense Significance as the Time of the Action*; by Oscar E. Johnson, is published by the Linguistic Society of America as Language Dissertation No. 21. George Watson has traced many "Dialect Survivals of Anglo-

Saxon Inflection" (*JEGP*) in the dialects of modern English. George W. Small, "On the Study of Old English Syntax" (*PMLA*), discusses the aim and proper method of such study. Robert J. Menner has examined "The Conflict of Homonyms in English" (*Language*) as a cause of the obsolescence and loss of words in the language. Hope E. Allen illustrates "The Influence of Superstition on Vocabulary" (*PMLA*) and J. M. Steadman, Jr. chronicles many cases of "Linguistic Cowardice and Verbal Tendencies" in the language (*Eng. Jour.*). In the field of recent English, Joseph Jones traces the growth of new idioms in "Some Semantic Observations on Certain Uses of *go*" (Univ. of Texas *Studies in Eng.*) and W. F. Bryan writes on "The Preterite and the Perfect Tense in Present-Day English" (*JEGP*). Phonetic studies include R-M. S. Heffner's "The Program of the Prague Phonologists" (*Am. Speech*), Kemp Malone's "Phonemes and Phonetic Correlations in Current English" (*Engl. Studies*), the same author's "The Phonemic Structure of English Monosyllables" (*Am. Speech*), and E. W. Scripture's "The Nature of the Vowels" (*Quar. Jour. of Speech*).

GENERAL LITERATURE

A valuable *Census of Medieval and Renaissance Manuscripts in the United States* has been compiled by Seymour De Ricci, which, although but the first of two volumes, shows a surprising number of manuscripts in American collections. Harry B. Weiss has prepared *A Catalogue of the Chapbooks in the New York Pub-*

¹ Periodicals are cited under the following abbreviations, the reference being always to the volume for the year covered by this review: *PMLA*, *Publications of the Modern Language Association of America*; *MP*, *Modern Philology*; *MLN*, *Modern Language Notes*; *MLR*, *Modern Language Review*; *JEGP*, *Journal of English and Germanic Philology*; *SP*, *Studies in Philology*; *PQ*, *Philological Quarterly*; *ELH*, *A Review of English Literary History*; *RES*, *Review of English Studies*; *RR*, *Romanic Review*. Titles appearing as theses or in the publications of universities are followed where possible by the name of the university.

lic Library. A. Edward Newton's *Bibliography and Pseudo-Bibliography* presents the three lectures delivered on the Rosenbach Foundation at the University of Pennsylvania. A *Handbook to Literature*, useful both to the student and the general reader, has been prepared by William F. Thrall and Addison Hibbard. Part One is an alphabetical list of literary and critical terms with explanation and historical comment; Part Two is an outline of English and American literature by years, in parallel columns.

Two volumes of collected essays have been published by well-known scholars: Lane Cooper's *Evolution and Repentance* and John L. Lowes' *Essays in Appreciation*. Norman Foerster in "Literary Scholarship and Criticism" (*Eng. Jour.*) reaffirms his position that criticism is the highest aim of scholarship and that this criticism should have for its chief concern the universal and timeless in literature. Paul F. Speckbaugh's *Some General Canons of Literary Criticism Determined from an Analysis of Art* is a Catholic University of America dissertation. Margaret L. Wiley's "Genius: A Problem in Definition" (*Univ. of Texas Studies in English*) illustrates historically five meanings of the word. Frank W. Chandler's "Expression and Communication" (*Sewanee Rev.*) is an essay on the conceptions of the nature of poetry.

A fourth volume of *Representative English Comedies*, a series begun by the late Professor Charles M. Gayley, has been published with the collaboration of Alwin Thaler. It covers *Dryden and His Contemporaries: Cowley to Farquhar* and, like the others, is provided with valuable critical essays by various scholars. A useful compilation for students of the Drama is *Theatre Collections in Libraries and Museums*, by Rosamond Gilder and George Freedley. Alardyce Nicoll has published *The English Theatre and Film and Theatre*, the former a history of English theatres. Robert P. Utter and Gwendolyn Needham take up heroines in literature since 1740 in a book with the title *Pamela's Daughters*. The most recent of the biblio-

graphical aids that have come from the University of Washington of late years is Edward G. Cox's *A Reference Guide to the Literature of Travel, Including Voyages, Geographical Descriptions, Adventures, Shipwrecks and Expeditions*. Oscar J. Campbell, "The Biographical Approach to Literature" (*Eng. Jour.*), discusses the aims and method of biography and the particular needs of a biography of a man of letters. Mention may be made finally of Agnes Repplier's book of essays on humorous literature entitled *In Pursuit of Laughter*.

OLD ENGLISH LITERATURE (TO 1150)

Several important Old English texts have been reedited in the course of the year. Frederick Klaeber's monumental edition of *Beowulf* has appeared in a third edition, carefully revised and reset throughout, incorporating much new matter in the introduction and bibliographies. Kemp Malone has presented a new text and interpretation of the Old English poem *Widsith* in Methuen's Old English Library and has added addenda and corrigenda in *MLR*. The series of *Anglo-Saxon Poetic Records* begun by the late Professor Krapp is being continued by Elliott V. K. Dobbie. The third volume contains *The Exeter Book*. Rudolph Willard, "On Blickling Homily XIII: *The Assumption of the Virgin*" (*RES*) calls attention to the publication recently of a third recension, that on which the English homily is based, and prints a portion of the Old English text from a new manuscript. Kemp Malone, "Mæohild" (*ELH*), interprets the troublesome third section of *Deor* as a reference to the story, found in Scandinavian ballads, of Gaute and Magnhild. Charles W. Kennedy offers the general reader a small volume of translations of *Old English Elegies*. As throwing light on the cultural history of England in this period, J. D. A. Ogilvy traces the *Books Known to Anglo-Latin Writers from Aldhelm to Alcuin* (670-804). The book is published by the Medieval Academy.

MIDDLE ENGLISH LITERATURE
(1150-1500)

Anglo-Norman.—Much excellent work was done in 1936 in the field of Middle English. Of great value is Josiah C. Russell's *Dictionary of Writers of Thirteenth Century English* (*Bulletin of the Institute of Historical Research, Special Supplement No. 3*), which gathers information about some 350 writers, in both Latin and the vernacular languages, from public records and other sources. Hope Emily Allen's interest in the *Ancren Riwle* continues to bear fruit. She reports the discovery (*LTLS*) of a new version in Anglo-Norman, thus giving us a second French text, and in the same journal she raises questions about the provenience of several English manuscripts of the work. The origin of Arthurian romance is approached by Roger S. Loomis in an article called "By What Route Did the Romantic Tradition of Arthur Reach the French?" (*MP*). He pictures Wales as the meeting ground of Irish, Welsh, and Southern Scottish tradition and believes the stories were carried to France by Breton minstrels, a supposition rendered more likely by the fact that there were many Bretons in William the Conqueror's army and in his following. William A. Nitze revives the question, "Is the Green Knight Story a Vegetation Myth?" (*MP*), pointing out that the origin of a story may be unknown to those who tell it later and maintaining that the Green Knight tale, as it appears in the *Perlesvaus*, represents a vegetation ritual or myth. Minnie E. Wells claims the Latin text as a direct source in "The *South English Legendary* in Its Relation to the *Legenda Aurea*" (*PMLA*). Sister M. Aquinas Devlin, who is editing Bishop Brunton's fourteenth century collection of sermons, offers some valuable observations correcting "The Chronology of Bishop Brunton's Sermons" (*PMLA*) proposed last year by Miss Kellogg (*ibid.*). H. G. Pfander has given us a valuable survey of "Some Medieval Manuals of Religious Instruction in England and Observations on Chaucer's *Parson's Tale*"

(*JEGP*), while Karl Young prints a small fragment of an independent text of Mirk's *Festial* in "Instructions for Parish Priests" (*Speculum*). Ruth J. Dean prints "An Anglo-Norman Version of Grosseteste: Part of His *suidas* and *Testamentum XII Patriarcharum*" (*PMLA*). Some progress is made toward the identification of Sir John Mandeville by K. W. Cameron in "A Discovery in John de Mandevilles" (*Speculum*), who has gathered records of some 46 John Mandevilles, most of whom can be localized.

Chaucer.—Several interesting developments in Chaucer scholarship have occurred. Professor Carleton Brown's identification of Chaucer's *Wretched Engendering of Mankind* (cf. *AYB* for 1935) has been challenged by J. S. P. Tatlock, "Has Chaucer's *Wretched Engendering* Been Found?" (*MLN*) and Germaine Dempster, "Did Chaucer Write *An Holy Medytacion*?" (*ibid.*). Dr. Brown offers "An Affirmative Reply" (*ibid.*). James M. Cline, "Chaucer and Jean de Meun: *De Consolatione Philosophiae*" (*ELH*), offers a plausible explanation of Jean de Meun's authorship of the text Chaucer used. The *Canterbury Tales* have as usual attracted most scholarly attention. Martin M. Crow records the "Unique Variants in the Paris Manuscript of Chaucer's *Canterbury Tales*" (*Univ. of Texas Studies in English*). Irving Linn in "The Arming of Sir Thopas" (*MLN*) finds numerous authorities for some of the features considered absurd by Professor Manly, but agrees that there is unquestionably a satirical purpose in others. Albert C. Friend prints an important new variant in "Chaucer's Prioress's Tale: An Early Analogue" (*PMLA*). Haldeen Braddy supports "The Oriental Origin of Chaucer's Canacee-Falcon Episode" (*MLR*) with stories from the *Arabian Nights* and other eastern sources. J. S. P. Tatlock contributes an illuminating commentary on "Chaucer's *Merchant's Tale*" (*MP*) while Roland M. Smith offers brief notes on special points in "Three Notes on the

Knight's Tale" (*MLN*) and "Two Chaucer Notes" (*ibid.*).

Early Drama.—In the field of the early drama F. M. Salter has made an interesting discovery among the records of the Company of Coopers at Chester of "The Trial and Flagellation: A New Manuscript." It is edited with other dramatic records of the Chester craft guilds in *The Trial & Flagellation with Other Studies in the Chester Cycle* (Malone Soc.). Margaret Trusler studies "The Language of the Wakefield Playwright" (*SP*), confirming the usual view of the Wakefield author's dialect and concluding that on phonological grounds his work should not be placed earlier than the first quarter of the fifteenth century. For convenience, although there is but slight chronological justification for it, mention may be made here of S. B. Hustvedt's *Melodic Index of Child's Ballad Tunes* (California).

MODERN ENGLISH LITERATURE (1500-1700)

General.—Esther C. Dunn's *The Literature of Shakespeare's England* is a readable survey of moderate compass. Hardin Craig's *The Enchanted Glass: The Elizabethan Mind in Literature* attempts to recreate the Elizabethan intellectual horizon. More popular in appeal is Gamaliel Bradford's last book, *Elizabethan Women*. William Nelson has published two careful articles on Skelton, one discussing the date and interpretation of "Skelton's *Speak, Parrot*" (*PMLA*), the other tracing the course of "Skelton's Quarrel with Wolsey" (*ibid.*). Margaret Hearsey has edited *The Complaint of Henry, Duke of Buckingham, including the Induction, or Thomas Sackville's Contribution to the Mirror for Magistrates* (Yale). Lily B. Campbell, "A Mirror for Magistrates" (*LTLS*), defends her view that the suppressed edition of the *Mirror* was published in 1555. Edwin R. Casady offers "A Reinterpretation of Surrey's Character and Actions" (*PMLA*) while Walter G. Friedrich discusses "The Stella of Astrophel" (*ELH*).

Spenser.—Among Spenser studies

those of more general interest include Jewel Wurtsbaugh's *Two Centuries of Spenserian Scholarship, 1609-1805*; Book IV of the *Faerie Queene*, edited by Ray Heffner in the Variorum Edition; and Herbert W. Sugden's *The Grammar of Spenser's Faerie Queene* (Duke). Charles G. Smith combines in a small volume his studies in *Spenser's Theory of Friendship*. Rosemond Tuve considers "Spenser's Reading: The *De Claris Mulieribus*" (*SP*). Harold Stein, "Spenser and William Turner" (*MLN*), examines Turner's anti-Catholic tracts and finds in the last, *The Hunting of the Romish Wolf*, an illuminating commentary on the September eclogue. Rudolf Gottfried's "Spenser and Stanyhurst" (*LTLS*) is an account of the attack on Stanyhurst in the *View of the Present State of Ireland*. Also deserving mention are Mary Parmenter's "Spenser's Twelve Aeglogues Proportionable to the Twelve Monethes" (*ELH*), J. A. S. McPeck's "The Major Sources of Spenser's *Epithalamion*" (*JEGP*), Isabel E. Rathborne's "A New Source for Spenser's *Faerie Queene*, Book I" (*SP*) suggesting a sermon in the *Second Book of Homilies* (1571), and Ray Heffner's "Essex and Book Five of the *Faerie Queene*" (*ELH*).

Raleigh and Others.—Among the writers of non-dramatic literature, Raleigh has received considerable attention. Edward J. Thompson has attempted a full length portrait in *Sir Walter Raleigh, Last of the Elizabethans*. Fred Sorensen gives a carefully considered account of the facts and circumstances in "Sir Walter Raleigh's Marriage" (*SP*) and V. B. Heltzel shows that the tradition that "Raleigh's *Even Such Is Time*" (*Huntington Libr. Bull.*) was written the night before he died goes back to within a few months of his death. Hyder E. Rollins, "Deloney's Sources for Euphuistic Learning" (*PMLA*), shows that Deloney's learning was mostly second-hand. The same scholar has given an account of "Nicholas Breton's *The Works of a Young Wit* (1577)" (*SP*), an extremely rare book, and of "A Small

Handful of Fragrant Flowers (1575)" (Huntington Libr. Bull.).

Elizabethan drama is an inexhaustible field for the investigator. Willard Farnham in a lengthy volume has traced *The Medieval Heritage of Elizabethan Tragedy*; Theodore Spencer considers in detail the varying treatment of death, his book being called *Death and Elizabethan Tragedy: A Study of Convention and Opinion on the Elizabethan Drama* (Harvard); M. C. Linthicum has gathered into one well documented volume the results of her long study of *Costume in the Drama of Shakespeare and His Contemporaries*. Among studies of individual dramatists we may note Rupert Taylor's "A Tentative Chronology of Marlowe's and Some Other Elizabethan Plays" (PMLA) and A. M. Sampley's "Plot Structure in Peele's Plays as a Test of Authorship" (*ibid.*).

Shakespeare.—To mention the literature on Shakespeare, scholarly and popular, temperate and fanciful, would take more than the space of the present article. Space permits only a small selection. S. A. Tannenbaum's annual survey has again appeared, "Shakespeare and His Contemporaries in the Literature of 1935: A Classified Bibliography" (*Shakes. Assoc. Bull.*). The long-promised edition of *The Complete Works of Shakespeare* by George L. Kittredge has now been published. A second volume of notes and commentary is promised. Anton A. Raven has compiled *A Hamlet Bibliography and Reference Guide, 1877-1935*. Matthew W. Black in "Shakespeare's Seventeenth Century Editors" (*Proc. Am. Philos. Soc.*) reports on the results of a full study of the four folios made in collaboration with Matthias A. Shaaber. David L. Patrick has published a dissertation on *The Textual History of Richard III* (Stanford) and Lucille King compares the "Text Sources of the Folio and Quarto Henry VI" (PMLA), showing that generally the Folio is closer to the chronicles than the Quarto text. Julia G. Wales writes on "Elaboration of Setting in *Othello* and the Emphasis of the Tragedy" (*Trans.*

Wisc. Acad.). Somewhat broader topics are treated in E. C. Knowlton's "Nature and Shakespeare" (PMLA) and Carroll Camden's "Shakespeare on Sleep and Dreams" (*Rice Inst. Pamphlet*). Somewhat similar questions are taken up in John Wilcox, "Love in *Antony and Cleopatra*" (Mich. Acad.), W. C. Curry, "Sacerdotal Science in Shakespeare's *The Tempest*" (*Archiv*), and John W. Draper, "Political Themes in Shakespeare's Later Plays" (*JEGP*). D. T. Starnes in "More about the Prince Hal Legend" (*PQ*) calls attention to three neglected versions of the conflict between the Prince and the Chief Justice. The authorship of *Pericles* is considered by William T. Hastings in "Exit George Wilkins" (*Shakes. Assoc. Bull.*).

Ben Jonson.—Of Shakespeare's contemporaries and successors, Jonson has been most fortunate in the work of the year. Mark Eccles has found the record of "Jonson's Marriage" (*RES*) in 1594 and throws additional light on his children. He has also shown that the "Memorandums of the Immortal Ben" (*MLN*) are playful frauds of Lewis Theobald. H. H. Hudson has edited the *Epigrams, The Forest, Underwoods*; O. J. Campbell studies Jonson's efforts to give satire an effective dramatic form in "The Dramatic Construction of *Poetaster*" (Huntington Libr. Bull.); and Robert G. Noyes records the revivals of "Ben Jonson's Masques in the Eighteenth Century" (*SP*). A little known play has been edited as a dissertation by Howard G. Rhoads, Wm. Hawkins' *Apollo Shroving* (Penna.).

Science in Literature.—Marjorie Nicholson continues her studies in eventeenth century scientific developments and their reflection in literature in *A World in the Moon: A Study of the Changing Attitude toward the Moon in the Seventeenth and Eighteenth Centuries* (Smith). Thomas F. Mayo's *Epicures in England* is an account of Epicureanism in the second half of the seventeenth century and the early part of the eighteenth. George Williamson discusses "Senecan Style in the Seven-

teenth Century" (PQ). Louis Teeter observes "The Dramatic Use of Hobbes' Political Ideas" (ELH). "The Progress Poem in the Seventeenth Century" by Mattie Swayne (Univ. of Texas *Studies in Eng.*) is an attempt to fill the gap between Denham's *Progress of Learning* (1668) and Lord Lansdowne's *Progress of Beauty* (1701). Thomas Fuller is the subject of a biography by Dean B. Lyman.

Milton.—Milton studies of general interest include George W. Whiting's "A Pseudonymous Reply to Milton's *Of Prelatical Episcopacy*" (PMLA), which calls attention to a hitherto unnoticed pamphlet throwing light on the date of Milton's tract. In "Milton and Lord Brooke on the Church" (MLN) the same author offers evidence of reciprocal influences between the two men. Don M. Wolfe discusses "Milton's Conception of the Ruler" (SP). J. Milton French determines "The Date of Milton's Blindness" (PQ) as towards the end of February, 1652. He also discusses "Milton as Satirist" (PMLA), to which may be added Whiting's note on "The Satire in *Eikonoklastes*" (N&Q).

Seventeenth century poetry is treated in Helen C. White's *The Metaphysical Poets: A Study in Religious Experience* and a number of articles. Austin Warren writes on "George Herbert" (Amer. Rev.) and "Crashaw's Reputation in the Nineteenth Century" (PMLA). Gordon S. Haight traces "Francis Quarles in the Civil War" (RES) and Ralph M. Wardle studies "Thomas Vaughan's Influence upon the Poetry of Henry Vaughan" (PMLA). *A Concordance to the Poems of Robert Herrick* has been compiled by Malcolm MacLeod.

Drama.—The drama of this period is represented by Brice Harris's "The Date of Thomas Shadwell's Birth" (LTLS), citing evidence for March 24, 1640; Chas. E. Ward's "The Dates of Two Dryden Plays" (PMLA); Fred G. Wolcott's "John Dryden's Answer to Thomas Rymer's *The Tragedies of the Last Age*" (PQ); and John C. Hodge's "The Dating of Congreve's Letters" (PMLA).

THE EIGHTEENTH CENTURY

General.—The eighteenth century, with so many elements of interest and figures of importance, naturally continues to attract a large following among scholars. Calvin D. Yost, Jr. has published a dissertation on *The Poetry of the Gentleman's Magazine: A Study in Eighteenth Century Literary Taste* (Penna.). A related study is Edward B. Hooker's "The Reviewers and the New Trends in Poetry, 1754-1770" (MLN). Robert A. Aubin's *Topographical Poetry in XVIII-Century England* is published in the Revolving Fund Series of the Modern Language Association. Richard F. Jones' *Ancients and Moderns* is, as its sub-title states, *A Study of the Background of the Battle of the Books* (Wash. Univ.). Kenneth MacLean writes on *John Locke and English Literature of the Eighteenth Century*, and Wallace C. Brown investigates "The Popularity of English Travel Books about the Near East, 1775-1825" (PQ).

Fiction.—Eighteenth century fiction is surveyed in Ernest Bernbaum's "Recent Works on Prose Fiction before 1800" (MLN). Rudolf G. Stamm looks at Defoe from a new point of view in "Daniel Defoe: An Artist in the Puritan Tradition" (PQ). Alan D. McKillop's *Samuel Richardson, Printer and Novelist* is a thoughtful and well documented study. George Sherburn contributes "Fielding's *Amelia*: An Interpretation" (ELH), and Paul B. Anderson writes on "Mistress Delariviere Manley's Biography" (MP).

Johnson and Others.—Dr. Johnson and his circle are treated in a number of titles: W. B. C. Walkins' *Johnson and English Poetry before 1660* (Princeton); *Boswell's Journal of a Tour to the Hebrides with Samuel Johnson, LL.D.*, edited by Frederick A. Pottle and Chas. A. Bennett; *The Literary Career of Sir Joshua Reynolds*, by Frederick W. Hilles; and "New Light on the Classical Scholarship of Thomas Gray," by LaRue Van Hook (Amer. Jour. of Phil.). We may mention finally Richmond P. Bond's "Eighteenth Century Correspondence: A Survey"

(SP), S. L. Gulick's "The Publication of Chesterfield's *Letters to His Son*" (PMLA), De Lancey Ferguson's "Some New Burns Letters" (*ibid.*), and Franklyn B. Snyder's *Robert Burns: His Personality, His Reputation, and His Art*.

THE NINETEENTH CENTURY

Bibliography.—An important guide to nineteenth century literature is contained in *Bibliographies of Twelve Victorian Authors*, compiled by T. G. Ehrsam, R. H. Deily, and R. M. Smith. The authors included are Arnold, E. B. Browning, Clough, Fitzgerald, Hardy, Kipling, Morris, Christina Rossetti, D. G. Rossetti, Stevenson, Swinburne, and Tennyson. Another useful bibliography is C. H. Patton's *The Amherst Wordsworth Collection*. The same author has published *The Rediscovery of Wordsworth*.

Poetry.—T. M. Raysor has edited *Coleridge's Miscellaneous Criticism. Letters of Hartley Coleridge*, edited by E. L. Griggs, contains new Wordsworth-Coleridge-Southey correspondence. B. R. McElderry, Jr. discusses "Coleridge's Plan for Completing *Christabel*" (SP). Claude L. Finney's *The Evolution of Keats' Poetry* is an exhaustive study in two volumes. Nelson S. Bushnell has followed in the poet's tracks in *A Walk after John Keats*. Carl Grabo's *The Magic Plant* is a study of the evolution of Shelley's thought. I. J. Kapstein discusses "The Symbolism of the Wind and the Leaves in Shelley's *Ode to the West Wind*" (PMLA), and Marcel Kessel, in "The Poet in Shelley's *Alastor*" (*ibid.*), differs with Mueschke and Griggs in their interpretation of the poem. Joseph W. Beach's *The Concept of Nature in Nineteenth-Century Poetry* is a 600-page study of an important subject. *The Time of Tennyson*, by Cornelius Weygandt, is a history of English poetry from 1835 to 1885. A. C. Howell offers "Tennyson's *Palace of Art*—An Interpretation" (SP).

Essays, Letters, etc.—Edith C. Johnson's *Lamb Always Elia* is a critical study of Charles Lamb. Two significant books on DeQuincey have

appeared: Horace A. Eaton's *Thomas DeQuincey* and Willard H. Bonner's *DeQuincey at Work* (Buffalo). Eaton has also published "The Letters of DeQuincey to Wordsworth" (ELH). Hill Shine in two articles has studied "Carlyle's Views on the Relation between Religion and Poetry up to 1832" and "Carlyle's Views on the Relation between Poetry and History up to Early 1832" (SP), while Charles F. Harrold examines "The Nature of Carlyle's Calvinism" (*ibid.*). Richard W. Armour has edited *The Literary Recollections of Barry Cornwall*. R. J. Conklin's *Thomas Cooper the Chartist (1805-1892)* is based upon voluminous manuscript material (Columbia). James V. Logan's *The Poetry and Aesthetics of Erasmus Darwin* is a Princeton dissertation.

Fiction.—Several important studies deal with the nineteenth century novel. James T. Hillhouse's *The Waverly Novels and Their Critics* is a well organized study of the contemporary reception and subsequent criticism of Scott's novels. Matthew W. Rosa's dissertation called *The Silver-Fork School* deals with "Novels of Fashion preceding *Vanity Fair*" (Columbia). Blanche C. Williams' *George Eliot: A Biography* is a full and careful life. Franklin P. Rolfe publishes "Letters of Charles Lever to His Wife and Daughter" (*Huntington Libr. Bull.*). Samuel V. Gapp's *George Gissing, Classicist* is a University of Pennsylvania dissertation. Carl J. Weber's *Hardy at Colby: A Check-list of the Writings by and about Thomas Hardy now in the Library of Colby College* serves as the beginning of a Hardy bibliography.

CONTEMPORARY

Twelve essays on contemporary writers make up the volume of R. P. Blackmur called *The Double Agent: Essays in Craft and Elucidation*. The same author contributes a critical study of "The Later Poetry of W. B. Yeats" (*Southern Rev.*). Ellis A. Ballard's *Catalogue Intimate and Descriptive of My Kipling Collection: Books, Manuscripts, Letters, etc.* is a valuable list of Kipling material. Stephen V. Benét's "Rudyard Kipling,

Teller of Magic Tales" (N. Y. *Herald-Tribune Books*) is a brilliant appreciation. Howard C. Rice writes of "Rudyard Kipling in New England" (N. E. *Quar.*), and James W. Thompson explains with documents "The Origin of Kipling's *Rhyme of the Three Captains*" (in his *Byways in Bookland*). C. S. McIver has published a thesis on *William Somerset Maugham: A Study of Technique and Literary Sources* (Penna.), and

R. F. Roberts contributes "Bibliographical Notes on James Joyce's *Ulysses*" to the *Colophon*. The death of A. E. Housman makes timely John Erskine's "What Is Contemporary Poetry" (N. A. *Rev.*), an appreciation of Housman, and Houston Martin's "Housman's Place among English Poets" (N. Y. *Herald Tribune*, May 17, 1936) contains valuable notes on Housman's early reputation by one who enjoyed the poet's friendship.

GERMANIC LANGUAGES AND LITERATURE

By F. W. KAUFMANN

PROFESSOR, OBERLIN COLLEGE

VALUE OF FOREIGN LANGUAGE STUDY

The time has come when scholars in the field of Modern Foreign Languages must lend their support to foreign language study in high schools and colleges if they do not want to limit themselves to mere research activities. In order to maintain the study of languages in the lower institutions they will have to show that foreign languages are really an instrument for the broadening of students' intellectual and cultural education. They will have to study more than has been done heretofore the human experiences and values which have been laid down in the literatures of foreign countries. For, it is more and more recognized that the chief task of foreign language study and the reason of its existence in our institutions of higher learning is the transmission of these values; for culture, after all, is a system of values, and the study of foreign languages requires a creative understanding which only a thoroughly cultured personality may expect to achieve. This is the problem which has to be faced sooner or later and which has again been advocated by Martin Schütze in his article: "Towards a Modern Humanism" (*PMLA*)*

The tendency of saving the values of foreign literatures in view of a further curtailment of foreign language study is apparently responsible for Sol Liptzin's attempt to give a *Historical Survey of German Literature* (Prentice Hall, N. Y.) on the basis of material accessible in translation. Although the book itself does not fall under the category of scholarly investigation, it attacks a problem which has to be met. E. Rose's *Geschichte der deutschen Dichtung auf kulturgeschichtlicher Grundlage* (Prentice Hall, N. Y.), also conceived as a handbook for college instruction, is indicative of a growing educational trend to integrate the diverging interests of students, and gives some hope that the work begun by the late Kuno Francke of Harvard will be continued and will lead to a systematic scholarly interpretation and reevaluation of foreign literature and culture at the universities. W. Brock's *Introduction to Contemporary German Philosophy* (Cambridge Univ. Press) should be of great assistance in this endeavor to introduce a deeper philosophical aspect in the study of modern German literature. After an outline of German philosophy during the last 100 years, he treats in a more detailed analysis the philosophical thinking of Nietzsche, Dilthey, Husserl, Kierckegaard, Heidegger and Jaspers. E. C. Roedder

* Abbreviations: GR=Germanic Review; JEGP=Journal of English and Germanic Philology; MfdU=Monatshefte für deutschen Unterricht; PMLA=Publications of the Modern Language Association.

GERMANIC LANGUAGES AND LITERATURE

investigates on the basis of the dialect of the village Oberschefflenz the *Volkssprache und Wortschatz des badischen Frankenlandes* with regard to sounds, forms, syntax, style, vocabulary, historical development, geographical influences (Modern Language Association Books, N. Y.).

TRANSLATION AND BIBLIOGRAPHY

L. M. Hollander published a collection of *Old Norse Poems*, in which he includes the most important Non-Skaldic poems which are not contained in the Poetic Edda (Columbia Univ. Press, N. Y.). Hall-dór Hermannsson continues his bibliographical survey on Old Icelandic Literature by the publication of the *Sagas of Icelanders* (Cornell Univ. Press, Ithaca), as a supplement to the bibliography of the Icelandic sagas and minor tales. E. H. Sehrt and T. Starck continued the publication of their critical edition of the works of Notker der Deutsche with a Volume II, containing *Marcianus Capella, De Nuptiis Philologiae et Mercurii* in the *Altdeutsche Textbibliothek* (Niemeyer, Halle Germany). P. M. Palmer and R. P. Moore published the *Sources of the Faust Tradition from Simon Magus to Lessing* (Oxford Univ. Press, N. Y.). G. O. Arlt provided a critical edition of Friedrich Spee's *Trutznachtigall* (Niemeyer, Halle, Germany).

F. O. Nolte examines *The Early Middle Class Drama* (Ottendorfer Memorial Series of Germanic Monographs, Lancaster, Pa.) in England, France, and Germany from 1696, the year of the appearance of Cibber's *Love's Last Shift* to the year 1774, in which Ramler wrote his critical summary on the domestic tragedy. After a careful analysis of the intellectual background, the evolution from Rationalism to a more humanized and emotionalized Enlightenment, he examines the typical aim of the bourgeois drama to "present a touching and moral picture of its own milieu," and finally treats of its sources, development and ramifications. H. W. Pfund contributes a monograph to the somewhat neg-

lected study of the literature of the Enlightenment period by his *Studien zu Wort und Stil bei Brockes* (Ottendorfer Memorial Studies of Germanic Monographs, Lancaster, Pa.). C. C. D. Vail in his book *Lessing's Relation to the English Language and Literature* (Columbia Univ. Press) brings proof that Lessing had a ready command of English from the time of his earliest journalistic activity, and that his three major translations in 1756-57 entitle him to a place among the outstanding German translators of English material. In his early comedies his attitude toward English sources is more eclectic and imbued with middle-class optimism. English spirit and sources become paramount in *Sara Sampson* and the *Literaturbriefe* and mark the end of tolerance toward French pseudo-classic tragedy in favor of a complete recognition of Aristotelian theory and Shakespeare's creative genius.

GOETHE

J. A. von Bradish, *Goethes Beamtenlaufbahn* (B. Westermann, N. Y.), gives an account of Goethe's many ministerial activities in the State of Weimar as inspector of the mines, as tax and road commissioner, as director of the court stage and as supervisor of the cultural institutions, of his advancement, honors, etc. A second part of the book contains all available documents pertaining to this least known side of Goethe's life.

AUGUST VON KOTZEBUE

A. W. Holzmann examines the *Family Relationship in the Dramas of August von Kotzebue* (Princeton Univ. Press) in all its aspects—the lover and the sweetheart, the relationships of parents and children, brothers and sisters, aunts and uncles, etc.—and thereby reveals the real merit of an author of minor artistic qualities—the power of observation which makes his comedies a source for the sociological structure of Germany of the Napoleonic era.

INFLUENCE OF THE
ROMANTICISTS

M. J. Jehle finds in *Das deutsche Kunstmärchen von der Romantik zum Naturalismus* (Illinois Studies in Language and Literature) that the Kunstmärchen of the nineteenth century is under the influence of the Romanticists, the folk fairy tales and the Oriental tale. Hauff and Gotthelf placed their heroes in a more real and naïve environment, whereas the fairy-tale of Mörike, Keller, Raabe, Stifter, and other poetic realists combined objective observation of nature with a delight in an optimistic fairy-tale atmosphere.

THE PROVERB IN IBSEN

Ansten Anstensen in *The Proverb in Ibsen* (Columbia Univ. Press) traces the author's use of proverbial material in the dramas, speeches and letters and shows that Ibsen draws more on Biblical and conventional proverbs than on the vernacular. This is explained by the fact that in a great number of cases these proverbs are used to "express moods, ideas, sentiments that Ibsen wishes to satirize and to render suspect the traditional ideas which these phrases connote."

GERMAN LITERATURE IN
OTHER COUNTRIES

To the recently inaugurated study of reflections of German authors and literary trends in other countries, L. V. Hathaway adds a monograph on *German Literature of the Mid-Nineteenth Century in England and America as Reflected in the Journals 1840-1914* (Mount Vernon Press, Boston). Sol Liptzin continues his studies on Viennese impressionism in a publication on *Richard Beer-Hofmann*

(Bloch Publishing Co., N. Y.). H. G. Wendt's study, *Max Dauthendey, Poet and Philosopher* (Columbia Univ. Press) follows the development of the author through his early materialistic period to the emotional completion of his world view in a sympathetic relation to all living creatures. He investigates his oriental affinities and their perfection during his years of travel and residence on the Malayan island of Java, as well as stylistic relationship to other authors.

RECENT TRENDS
IN GERMAN LITERATURE

In the journals of our field, a decided and sane reserve is noticeable with regard to recent trends in German literature which can only be examined with extreme objectivity and detachment from political ideology. For medieval literature which seems to be more neglected than it deserves, an article by C. Selmer "Die Grundprobleme der Gesellschaft im Spiegel Bertholds von Regensburg" (*GR*) may be mentioned. M. Diez continues his studies on the dominant metaphor in an examination of its use in Goethe's *Werther* (*PMLA*). L. Tieck's qualification as a translator of English is examined by E. Zeydel (*PMLA*). Eichendorff's *Marmorbild* (*GR*) and *Aus dem Leben eines Taugenichts* (*MfdU*) are submitted to a new thematic and structural analysis by E. Feise. The middle of the nineteenth century is represented by a few articles, as one on Fontane (*GR*) and one on Heine (*JEGP*); the end of the nineteenth and the beginning of the twentieth centuries by studies on Sudermann, G. Hauptmann, Dehmelt, R. M. Rilke and Josef Ponten (*PMLA* and *GR*).

ROMANCE LANGUAGES AND LITERATURE

ROMANCE LANGUAGES AND LITERATURE

BY GEORGE IRVING DALE

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BIBLIOGRAPHIES

Interest in research in the field of Romance Languages and Literature is manifested by the following publications which appeared during the year 1936: "Hispano-American Literature in the United States, 1935. A Bibliography of Translations and Criticisms" (*Hisp*)* by S. E. Leavitt; *Bibliography of Articles and Essays on the Literatures of Spain and Spanish-America* (Perine Book Co. Minneapolis) by R. L. Grismer; *Bibliografía graciana* (*HR*) by M. Romera-Navarro; "Gabriel Miró: Bibliografía" (*RHM*) by S. C. Rosenbaum and J. Guerrero Ruiz; "Studies in Italian Linguistics" (*Ital*) by H. H. Vaughan; "Bibliography of Italian Studies in America" (*Ital*) by J. E. Shaw. Useful to Romance students is "A Bibliography of Recent Literature of the English Renaissance" (*SP*) by H. Craig.

LINGUISTICS

In the field of French language and phonetics several short studies have appeared: "O.F. (Norman) AOI and AVOI, and English AHOY" (*PMLA*) by H. A. Deferrari; "Etymology of French *potiron*" (*L*) by C. C. Rice; "Nazi" (argot français), 'syphilis,' 'syphilitique'" (*MLN*) by L. Spitzer; "French *bouse* 'Fiente de Vache'" (*SP*) by A. H. Schutz; "Old French Demonstratives" (*L*) by M. A. Pei; "The Breath Stream During Transitions in French" (*PMLA*) by C. E.

* Abbreviations: Chi., University of Chicago Dissertation; *FR*, *French Review*; Harv., Harvard University Press; *Hisp.*, *Hispania*; *HR*, *Hispanic Review*; IFS, Institute of French Studies; Ill., University of Illinois; *Ital.*, *Italica*; JHP, Johns Hopkins Press; *L*, *Language*; *MLJ*, *Modern Language Journal*; *MLN*, *Modern Language Notes*; *MP*, *Modern Philology*; Penn., University of Pennsylvania Press; *PMLA*, *Publications of the Modern Language Association of America*; *PQ*, *Philological Quarterly*; Prin., Princeton University Press; *RHM*, *Revista Hispánica Moderna*; *RR*, *Romanic Review*; *S*, *Speculum*; Smith, Smith College Studies in Language and Literature; *SP*, *Studies in Philology*; Wis., University of Wisconsin Studies in Language and Literature; Yale, Yale University Press.

Parmenter and S. N. Treviño. Sister Mary Calixta Garvey has made a study of the *Syntax of the Declinable Words in the Roman de la Rose* (Catholic Univ. of America). The following studies reveal a sustained interest in Spanish language problems: "'siquiere' y sus Variantes" (*HR*) by J. R. Palomo; "The Pronunciation of *sigat* in the Old Spanish Glosses" (*L*) by M. A. Luria; "Notes on the Value of 'H' in Old Spanish" (*HR*) by H. Deferrari; "Linguistic Archaisms in the Seattle Sephardism" (*Hisp*) by G. W. Umphrey and E. Adatto; "Pretonic I Stays in Spanish" (*HR*) by R. S. Boggs; "The Phonology of Popular Spanish as Seen in the *Género Chico*" (*PQ*) by R. K. Spaulding; "Verbal Aspect in Spanish" (*Hisp*) by H. Keniston; "Conditions Expressed by Spanish 'de' plus Infinitive" (*Hisp*) by C. E. Kany. A dissertation by J. A. Stransbaugh is *The Use of 'auer a' and 'auer de' as Auxiliary Verbs in Old Spanish* (Chi). W. E. Knickerbocker discusses "Assimilation in Spanish" (*RR*). For Italian A. Camilli has two articles: "Note di Pronuncia Italiana" (*Ital*), and "Varietà Ortografiche in Italiano" (*Ital*). Other articles are: "Italian *se* and the Formula of Adjuration" (*Ital*) by K. McKenzie; "*Uomo* as an Indeterminate Pronoun" (*L*) by C. B. Brown, and "Linguistic Theory in the Italian Renaissance" (*L*) by R. A. Hall, Jr. I. Dyen discusses "Portuguese *nosso* and *vosso*, *nós* and *vos*" (*L*), and A. H. Schutz "Three Provençal Terms of Falconry" (*MLN*).

FRENCH

Medieval.—E. Lewis wrote "Personality in the *Chanson de Geste*" (*PQ*), and J. Harris discusses "*Chanson de Roland*, line 485: A Disputed Reading" (*RR*). Other contributions to a knowledge of the medieval field included "An Early Redaction of the

Pseudo-Turpin" (S) by H. M. Smyser; "The Joie de la Cort Episode in *Erec* and the Horn of Bran" (PMLA) by H. Newstead; "An Anglo-Norman Version of Grosseteste: Part of his *Suidas* and *Testamenta XII Patriarcharum*" (PMLA) by R. J. Dean; "Un Fragment Inédit de la Traduction de la *Consolation* de Boece par Jean de Meun" (RR) by V. L. Dedek-Héry; "The Authorship of *Le Mystère de Griseldis*" (MLN) by G. Frank; "The Sword of Saint John the Baptist in the '*Perlesvaus*'" (MLN) by H. L. Robinson; "Pierre Grognet and '*Les Mélancholies*' of Jehan du Pin" (MLN) by R. E. Pike; "The Genesis of 'Alexandrin' as a Metrical Term" (MLN) by M. E. Porter; "The Birthplace of Gautier de Coincy" (MP) by L. Allen; "A Note on Gautier de Coincy" (MLN) by V. F. Koenig; "Le Symbole du Saule chez Conon de Béthune" (PMLA) by R. Levy; "The Origin of 'De Roussillon'" (PMLA) by J. Misrahi; "Catharist Social Ideas in Medieval French Romance" (RR) by J. W. Thompson. Studies of fifteenth century literature include "Villon's *Testament*, Lines 1610-11" (MLN) by U. T. Holmes, and *Varying Attitude Toward Women in French Literature of the Fifteenth Century: The Opening Years* (IFS) by B. H. Dow.

Sixteenth Century.—S. F. Will contributes two articles to this period: "A Note on Ronsard's *Epitafe de François Rabelais*" (MLN), and "Camille de Morel: A Prodigy of the Renaissance" (PMLA). Other studies are "Antoine de Baïf and the Ovidian Love-tale" (SP) by W. L. Wiley; "Du Barts' Use of Lucretius" (SP) by V. K. Whitaker; "The Date of the *Gentilhomme et son Page*" (MLN) by M. L. Radoff; "Lettre Inédite de Marguerite d'Autriche" (MLN) by M. Françon; "A Suggestion as to the Source of Montaigne's Title *Essais*" (MLN) by J. C. Dawson; "Note on André de la Vigne" (PQ) by R. E. Pike; "Jean Lemaire, Du Bellay, and the Second Georgic" (MLN) by R. V. Merrill.

Seventeenth Century.—H. C. Lancaster published the third volume of

his *History of French Dramatic Literature in the Seventeenth Century. Part III. The Period of Molière* (JHP). A critical edition of Magnon, J. Tite, *Tragicomédie* (1660) (JHP) is the work of H. Bell. A. Marni published *Allegory in the French Heroic Poem of the Seventeenth Century* (Prin), and M. Bishop a study of the life and works of Pascal (Reynal and Hitchcock). Shorter articles are "Montani, Saint-Evremond and Longinus" (MLN) by D. W. Thompson; "A Passage in the First Preface of *Britannicus*" (MLN) by H. C. Lancaster; "The Kinship Between Nicolas Boileau and his Victim, Guillaume Colletet" (RR) by J. de Boer; "Pierre Bello's *Saint Eustache* and its Source in Surius" (MLN) by J. B. Ladd; "Bayle and his English Correspondents: Four Unpublished Letters" (RR) by L. P. Courtines; "Student Admissions to the Theater at Orleans in 1627-1751" (MLN) by D. M. Quynn; "Parallels Between *Soliman* and *Perseda* and Garnier's *Bradamante*" (MLN) by T. W. Baldwin; "Reference to the Face in French Drama Before Racine" (MLN) by T. Tykulsker.

Eighteenth Century.—The usual interest in Voltaire is maintained in the following five studies: "Voltaire's Treatment of the Miracle of Christ's Temptation in the Wilderness" (MLN) by H. Kellenberger; "Poems Attributed to Voltaire" (MP) by I. Wade; "Voltaire in the Eighteenth and Nineteenth Century Theatre" (MLN) by C. M. Crist; "Fact and Fiction in *Zaïre*" (PMLA) by R. E. Pike; *Voltaire and Jean Meslier* (Yale) by A. R. Morehouse. Other articles include "La Famille de Charles-Paul de Kock" (RR) by H. L. Brugmans; "Corneille de Pauw, and the Controversy Over his *Recherches Philosophiques sur les Américains*" (PMLA) by H. W. Church; "Did La Mettrie Write *Homme plus que Machine*?" (PMLA) by H. Hastings. Longer studies are *Prose Poems in French Literature of the Eighteenth Century* (IFS) by V. Clayton; *Man and Beast in French Thought of the Eighteenth Century* (JHP) by H. Hastings; *L'Evolution*

d'un Genre: le Livret d'Opéra en France de Gluck à la Révolution (1774-1793) (Smith) by R. Guiet.

Nineteenth Century and Contemporary.—Short articles bearing on this period include "The Pessimism and Optimism of Alfred de Vigny" (SP) by W. M. Dey; "The Early Fate of *Les Destinées*" (FR) by S. H. Clarke; "Carlyle and the Saint-Simonians" (SP) by E. M. Murphy; "Baudelaire et la Poésie Incantatoire" (FR) by M. Dondo; "Stendhal et Sanskrit" (MP) by R. Vigneron; "Washington Irving as a Source for Borel and Dumas" (MLN) by W. A. Reichart; "The Inspiration of Aloysius Bertrand's *Le Deuxième Homme*" (RR) by G. L. van Roosbroeck; "Unanimism and the Novels of Jules Romains" (PMLA) by F. Walter; "A Sidelight on Barrès's Attitude Toward Politics" (MLN) by G. P. Orwen; "Inadvertent Repetition of Material in *A la Recherche du Temps Perdu*" (PMLA) by P. Kolb. Longer studies are *Social Attitude of the French Realists* (Ill) by P. Presta, and *Ferdinand Brunetière, the Evolution of a Critic* (Wis) by E. Hocking.

ITALIAN

Dante.—Several studies on Dante and his time were contributed to the various journals; among them "Three Dante Notes" (Ital) by H. D. Austin; "The Gawain Poet and Dante: A Conjecture" (PMLA) by G. H. Gerould; "Florence in the Time of Dante" (S) by G. Salvemini; "*Inferno XII, 100-126*, and the *Visio Karoli Crassi*" (MLN) by T. Silverstein; "Two Passages in Dante's *Paradiso*" (S) by S. A. Coomaraswamy; "*Purgatory: A Note to Canto XII, 94-96*" (PQ) by D. Internoscia. H. D. Austin has a special study in the Proceedings of the Twenty-fifth Anniversary Celebration of the Inauguration of Graduate Studies at the University of Southern California entitled "Roma, Maria, Lucia—A Dante Study (Convivio III, v)," and A. Lipari published *The Dolce Stil Novo According to Lorenzo de' Medici* (Yale).

Other Italian Studies.—"Petrarch, Disciple of Heraclitus" (S) by M. Françon; "Milton and Manso: Cups or Books?" (PMLA) by M. de Filipis; "Shelley and Carducci" (Ital) by M. T. Gnudi; "A Note on the Name d'Annunzio" (PQ) by J. Geddes.

SPANISH

Medieval.—A carefully prepared comparative study is *La Crónica de Veinte Reyes, a Comparison with the Primera Crónica General and a Study of the Principal Latin Sources* (Yale) by T. Babbitt. Two short articles are "Synalepha in Old Spanish Poetry: Berceo" (HR) by H. H. Arnold, and "Notes on the Versification of *El Libro de Alexandre*" (Hispan) by the same writer.

Golden Age.—Though belonging to the fifteenth century, W. C. Atkinson's article "The Interpretation of 'Romances e Cantares' in Santillana" (HR) is placed here. W. H. Shoemaker discusses "The LLabrés Manuscript and its Castilian Plays" (HR). J. E. Gillet contributes "The Date of Torres Naharro's Death" (HR) and "A Note on Bartolomé's *Aparicio*" (HR). Other articles are "The Date of Salazar's *Egloga de Breno*" (HR) and "The Relationship of Castillejo's *Farsa de la Constanza* and the *Sermón de Amores*" (HR), both by J. P. W. Crawford; "Further Influences of Ausias March on Gutierre de Cetina" (LMN) by A. M. Withers; "The *Examen de Ingenios* and the Doctrine of Original Genius" (Hispan) by C. M. Hutchings; "The First German Translation of *Lazarillo de Tormes*" (HR) by E. H. Hespelt; "The Popular 'Riña' in Lope de Rueda" (MLN) by J. Warshaw. Dramatists of the seventeenth century come under discussion in "Tirso's Self-Plagiarism in Plot" (HR) by G. E. Wade; "Notes on the Pizarro Trilogy of Tirso de Molina" (HR) by O. H. Green; "*Fuente Ovejuna* and its Theme-Parallels" (HR) by S. G. Morley; "Manuscripts Attributed to Moreto in the Biblioteca Nacional" (HR) by R. L. Kennedy; "Nuevos Datos Acerca de la Fecha de *Basta*

Callar" (HR) by S. N. Treviño; "How Many 'Comedias' Did Lope de Vega Write?" (Hisp) by S. G. Morley and C. Bruerton; "The Source of *La Fuerza del Natural*" (MLN) by R. L. Kennedy; "A Possible Source of Lope's Pear-Tree Story" (MLN) by E. H. Hespelt; "Tiercet Rimes of the Golden Age Sonnet" (HR) by D. C. Clarke; "Siglo de Oro Plays in Madrid, 1820-1850" (HR) by N. B. Adams. J. Van Horne has an article on "Fray Antonio Tello, Historian" (Hisp). J. Sánchez contributes a "Note on the Date of the Composition of *Don Quijote*" (HR). Two articles on Gracián by M. Romera-Navarro are "Reflexiones sobre los Postreros Días de Gracián" (HR) and "Una Página Curiosa del *Criticón*" (HR). A work of broader scope is *New Material on the Dramatic Treatment of Peter the Cruel and the Diffusion of the Legend in France, Germany, and England* (Chi) by E. Schons. B. Matulka studied the *Feminist Theme in the Drama of the Siglo de Oro* (Columbia U. Comparative Literature Studies). The eighteenth century has interested but one writer, R. S. Boggs, who treats of "Folklore Elements in *Fray Gerundio*" (HR).

Modern.—H. Gregerson is the author of *Ibsen and Spain; a Study in Comparative Drama* (Harv.). The pre-modern period is represented by "Notes on the Popularity of the Dramas of Victor Hugo in Spain During the Years 1835-1845" (HR) by T. A. Gabbert; "Une Copie Manuscrite d'Oeuvres Inédites de Larra: 1886" (HR) by A. Rumeau; "More Light on Larra" (HR) by F. C. Tarr; "Hartzenbusch y Lemming, 'El Eco de Madrid'" (MLN) by J. M. Gallardo; "Alarcón as Editor of 'El Látigo'" (Hisp) by E. H. Hespelt. For the period after 1890 consult "The Treatment of Landscape in the Novelists of the Generation of 1898" (HR) by R. Seeleman; "Recent Research on the Modernistic Poets" (HR) by E. K. Mapes; "Manuel Bartolomé Cossío" (RHM) by Angel del Río; "Gabriel Miró: Vida y Obra" (RHM) by M. de Mayo; "Naturaleza y Poesía en la Obra de

Gabriel Miró" (RHM) by A. Oliver Belmás.

Spanish America is represented by "Escritos Inéditos de Rubén Darío" (RHM) by E. K. Mapes, and "Notes on the Rôle of Gaucho Literature in the Evolution of Americanism in Argentina" (Hisp) by J. E. Espinosa.

PORTUGUESE

The following Portuguese works have been printed: "Dialogo em Defesa da Lingua Portuguesa" (PMLA) by E. B. Williams, and *Crônica de Dom João de Castro*, edited with an Introduction by J. D. Ford (Harv.).

FOREIGN INFLUENCE

French.—"Florencio Sánchez's Debt to Eugène Brieux" (SP) by K. E. Shedd; "Notes on the Influence of Addison's *Spectator* and Marivaux's *Spectateur Français* upon *El Pensador*" (HR) by H. Peterson; "A Source of the General *Estoria*: The French Prose Redaction of the *Roman de Thèbes*" (HR) by L. B. Kidde; "Eco di un Ritornello Brettone in un Canto d'Amor Galliziano" (HR) by E. Mele; "Algunas Notas sobre Rousseau en España" (Hisp) by Angel del Río.

Italian.—"Dante and Ferran Manuel de Lando" (HR) by N. W. Eddy; "*Orlando Furioso* and Rodomonth's *Infernall*" (MLN) by F. B. Williams, Jr.

Spanish.—"Gracián's *Oráculo Manual* and the *Maximes* of Mme. de Sablé" (HR) by G. Hough; "Manso's Debt to Santa Cruz de Dueñas" (HR) by M. de Filippis; "A Note on *El Diablo Cojuelo* and the French Sketch of Manners and Types" (Hisp) by E. B. Place; "Calderón, Boursault, and Rowenscroft" (MLN) by H. C. Lancaster.

Miscellaneous.—Of interest are *Marionettes in the North of France* (Penn) by R. S. Sibbald; *Francesco Balducci Pegolotti. La Practica della Mercatura* (Mediaeval Academy of America. Cambridge, Mass.) by A. Evans; "La Rima en la Filosofía Popular" (Hisp) by A. Elias; "The Legend of the Handless Maiden" (HR) by J. N. Lincoln.

LATIN LITERATURE

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Recent accessions are: *Ammianus Marcellinus* (vol. 2), by J. C. Rolfe (in press); *Seneca, Moral Essays* (vol. 3), J. W. Basore; *Sidonius, Poems and Letters* (vol. 1), by W. B. Anderson; *Livy* (vol. 11), by the late E. T. Sage (in press).

THE LATIN WRITERS*

Horace.—The bimillennial year has added to the store of addresses, essays, comments, and translations: A. F. West, "The Genius of Horace," *The American Scholar* (5,64ff.); B. L. Ullman, "Horace and the Philologists," *C.J.* (31,403ff.); H. R. Fairclough, *Some Aspects of Horace*, San Francisco, 1935; J. L. Van Gundy has published a new translation of the Odes in Horatian metres, Monmouth, Ill., 1936; J. B. Quinn a verse translation of the Odes, Epodes, and Art of Poetry, St. Louis, 1936. Eliza G. Wilkins studies in detail the similes of Horace in *C.W.*, (29,124ff., 129ff.). Under the title "*Pietas*: Horace and Augustan Nationalism" G. K. Strodsch in *C.W.*, (29,137ff.) treats of the national Odes. In *C.P.* (31,163ff.) W. K. Smith takes up again the question of the date of *Ars Poetica* (written, he thinks, in 23-22 B. C.). T. Frank has a note on *immunis* (*Carm.* 3,23,17) in *A.J.P.* (57,332ff.); M. Radin a note on *Carm.* 1,2,30ff. in *C.J.* (32,37f.), giving recent evidence for Hermes-Augustus. In *P.A.P.A.* (66, xxix.) J. C. Moseley raises the question whether Horace studied law, while (*ib. xxixf.*) W. J. Oates writes briefly on Horace's larger conception of the Mean. In *A.J.A.* 40,73ff., H. Fuhrmann in "Ein Reliefbildnis

des Horaz?" discusses a possible portrait in a relief in Boston.

Vergil.—The 6th *Aeneid* is considered by W. F. J. Knight in *T.A.P.A.* (66,256ff.) in the light of prehistoric cult in the New Hebrides and of Sumerian legend. In *C.P.* (31,253ff.) R. V. Cram discusses *silentia lunae* in *Aen.* 2,255 in connection with post-Homeric tradition. T. W. Valentine's article in *C.W.* (29,1ff.) on two passages in the 6th *Aeneid* has stimulated criticism and amplification by G. S. Smelters and S. A. Hurlbut (*ib.* 177ff.), followed by Mr. Valentine's reply (*ib.* 180f.). On *Aen.* 2,646 T. Frank has a note in *A.J.P.* (57,334f.). On the sources of *Aen.* 9,481ff. J. L. Heller remarks in *P.A.P.A.* (66,xxviii f.). Macaulay's attitude towards Vergil is recalled by Mary Johnston in *C.W.* (29,78).

Cicero.—In *C.J.* (32,39ff.) H. V. Canter treats Cicero's restrained use of mythological allusions. "Reflections of Personal Experience in Cicero's Ethical Doctrine," by A. P. Wagener, appears *ib.* (31,359ff.); "Irony in the Orations of Cicero," by H. V. Canter, in *A.J.P.* (57,457ff.); in *P.A.P.A.* (66,xxviii f.) an abstract of a paper on Cicero and the Academy by N. G. McCrear. Notes: I. E. Drabkin on Cicero, *Cat.* 1,19 in *C.W.* (29,77) as a Platonic reminiscence; J. W. Spaeth, Jr., on *Cedant arma togae* in *C.J.* (31,442). C. W. Siedler has published a *Guide to Cicero*, New York, 1935.

Other Writers.—"Character Portrayal in Plautus," by W. H. Juniper, *C.J.* (31,276ff.). Plautus' use of *rex*, "rich man," as having a possible Greek background is treated by P. W. Harsh in *C.P.* (31,62ff.). In *P.A.P.A.* (66,xxxii) J. N. Hough touches upon delayed exits in Plautus. T. Frank in a note on Terence, *Ad.* 573-585, in *A.J.P.* (57,470), finds a topographical allusion. Lucretius' teachings on love and marriage are studied by J. B. Stearns in *C.J.* (31,

*Periodicals are abbreviated as follows: *A.J.A.*, *American Journal of Archaeology*; *A.J.P.*, *American Journal of Philology*; *C.J.*, *Classical Journal*; *C.P.*, *Classical Philology*; *C.W.*, *Classical Weekly*; *Spec.*, *Speculum*; *T.A.P.A.*, *Transactions of the American Philological Association*; *P.A.P.A.*, *Proceedings of the same*. Titles of books, monographs and periodicals are italicized. Those of periodical articles and addresses are in quotation marks.

343ff.) in relation to alleged statements of Epicurus. The extent to which Lucretius attacks the Stoics is estimated by W. C. Korfmacher in *P.A.P.A.* (66,xxxix). In *C.J.* (32,92ff.) M. W. Avery analyzes *Tristia*, book 2, as "Ovid's Apologia." On *Metam.* 15,651f. (*Umbraque telluris*) J. P. Cooke has a note in *C.P.* (31,73f.). In *C.W.* (29,182f.) J. H. McLean emends Propertius, 1,16,38. On Seneca's appearance and his busts H. W. Kamp writes in *C.W.* (29,49ff.). In *P.A.P.A.* (66,xxixf.) J. N. Hough remarks on one aim in the prologues of Seneca. A note on his *De Beneficiis*, 3,16,2, by W. H. Alexander, appears in *C.W.* (29,190f.). In the front rank stands R. P. Robinson's admirable critical edition of the *Germania* of Tacitus, an American Philological Association Monograph, Middletown, Conn., 1935. F. B. Marsh and H. J. Leon have published *Tacitus, Selections from His Works*, with introduction and notes (*Ann., Agr., Germ.*), New York, 1936. "The Date of Tacitus' Proconsulship" by A. I. Suskin (who places it in 112-113), appears in *A.J.A.* 40,71f. Tacitus' judgment of the XII Tables is unfavorably viewed by M. S. Ginsburg in *P.A.P.A.* (66,xxxvii). Helen H. Tanzer has annotated a selection from the Letters of the Younger Pliny, adding a concise treatment of leading topics in Roman Life, New York, 1936. In *C.W.* (29,161ff.) J. Stinchcomb writes on "The Literary Tastes of the Younger Pliny." "The Date of the Composition of the *Argonautica* of Valerius Flaccus," by R. J. Getty, appears in *C.P.* (31,53ff.). W. H. Schulte has made an *Index Verborum Valerianus* (dissertation), Iowa City, 1935. In *C.W.* (29,86f.) R. A. Pack has a note on a passage in Fronto, p.151 Nab. M. M. Odgers in *T.A.P.A.* (66,25ff.) discusses "Quintilian's Rhetorical Predecessors."

MANUSCRIPTS AND TEXT-CRITICISM

Part 2 of E. A. Lowe's valuable collection, *Codices Latini Antiquiores*, has appeared, Oxford, 1935. In *A.J.P.* (57,113ff.) D. J. Campbell discusses "Two Mss. of the Elder Pliny" (in

England). F. Granger, in *Spec.* (11,261ff.), takes up "The Provenience of the London Vitruvius." For Tacitus see Robinson's *Germania* above. In *T.A.P.A.* (66,127ff.) Eva M. Sanford treats "Propaganda and Censorship in the Transmission of Josephus," dealing with the Latin versions as well.

LITERARY CRITICISM

Lectures at the Sorbonne reappear in E. K. Rand's *L'Esprits souverains dans la littérature romaine*, Paris, 1936. Collected papers of N. G. McCrea, under the title *Literature and Liberalism*, with special reference to Vergil and Horace, have appeared, New York, 1936 (for an appendix see Miscellaneous below). *Essays on Ancient Fiction*, by Elizabeth H. Haight, New York, 1936, deal chiefly with romances in Latin. In *Revue de Philologie* (10,171ff.) C. A. Forbes and M. S. Ginsburg deal with "Le Testamentum Porcelli, une Parodie Romaine." In *T.A.P.A.* (66,222ff.) E. L. Highbarger, "The Pindaric Style of Horace," finds no slavish imitation. *Pede dextro* and similar expressions are discussed by A. P. Wagener, "Putting the Best Foot Forward," *T.A.P.A.* (66,73ff.). "Compounds in Augustan Elegy and Epic," a study of this element of style, by J. G. Glenn, appears in *C.W.* (29,65ff., 73ff.). Caesar's epigram on Terence finds a new interpretation by J. J. Savage, in *C.W.* (29,185f.). In *P.A.P.A.* (66,xxxii) F. R. B. Godolphin traces psychological treatment of love in poetry back to Stesichorus. On "Later Latin Epic and Lucan" M. Hadas writes in *C.W.* (29,153ff.); on "The Development of Caesar's Narrative Style" J. J. Schlicher in *C.P.* (31,212ff.); on "Silent Rôles in Roman Comedy," H. W. Prescott in *C.P.* (31,97ff.), showing the use of supernumeraries, even retinues; on "Continuity of Time in Plautus" J. H. Hough in *C.P.* (31,244ff.). "Sound-ing brass" is illustrated by N. D. De Witt in *C.W.* (29,119f.). R. Mandra applies his law of similes to Lucan in *P.A.P.A.* (66,xxxiv). In *C.J.* (31,223ff.) M. J. Ruggles compares Horace and Herrick. L. R. Lind in *C.W.*

(29,56) adds to the list of classical echoes in A. E. Housman.

HISTORY AND BIOGRAPHY

The last work of the lamented G. Showman is *Monuments and Men of Ancient Rome*, New York, 1935. Other books are: *Ancient Rome as Revealed by Recent Discoveries*, by A. W. Van Buren, London, 1936; W. W. Hyde, *Roman Alpine Passes*, Philadelphia, 1935 (American Philosophical Society Memoirs); A. D. Winspear and L. K. Geweke, *Augustus and the Reconstruction of Roman Government and Society*, Madison, Wis., 1935; Charlotte E. Goodfellow, *Roman Citizenship*, Bryn Mawr, 1935 (dissertation). Writing "On the Export Tax of Spanish Harbors," in *A.J.P.* (57,87ff.), T. Frank finds a means of determining the amount from wine-jar inscriptions. On "Macedon, Illyria, and Rome, 220-219 B. C." J. V. A. Fine has a paper in *Journal of Roman Studies* (26,24ff.); E. T. Salmon on "Roman Colonisation from the Second Punic War to the Gracchi," (*ib.* 47ff.). In the same journal Grace H. Macurdy defends the supposition that the Median princess Iotape was married by Augustus to Mithradates III of Commagene (*ib.* 26,40ff.). J. W. Heaton publishes "Mob Violence in the Late Roman Republic, 133-49 B. C." (abstract of thesis), Urbana, Ill., 1935. In *C.J.* (31,479ff.) Hazel G. Ramsay treats "Government Relief during the Roman Empire," while in *L'Antiquité Classique* (4,419ff. and 5,147ff.), under the title "A Third Century A. C. Building Program," the same author publishes her studies in the biography of Alexander Severus.

Other papers are: "Administrative Commissions and the Official Career, 218-167 B. C.," by E. T. Sage and Adalaide J. Wegner, *C.P.* (31,23ff.); "On Two Passages of Cicero Referring to Local Taxes in Asia," by T. R. S. Broughton, *A.J.P.* (57,173ff.); "Some Non-Colonial Coloni of Augustus," by the same, *T.A.P.A.* (66,-18ff.); "The Greek Games at Naples" (in honor of Augustus), by R. M. Geer, (*ib.* 208ff.); "Were the *Venerii* in Sicily Serfs?" by V. Scramuzze,

A.J.P. (326ff.); "The Publii Lucilii Gamalae of Ostia," by Lily R. Taylor, (*ib.* 57,183ff.); "Two Praefectural Edicts concerning the Publicani," by O. W. Reinmuth, in *C.P.* (31,146),—a Princeton papyrus of the 2d century; "The Attitude of the Romans toward Peace and War," by D. S. White, in *C.J.* (31,465ff.); "Actium Before and After," A. M. Young, in *P.A.P.A.* (66,xxxvi). *The Iudicium Quinquivirale* (376 A. D.), Cambridge, Mass., 1935 is a Mediaeval Academy Monograph.

Recovery of vegetation in the ash from Vesuvius in 79 A. D. is studied by Ernestine B. Day in *C.W.* (29,100ff. and 105ff.), with detailed comparisons with scientific observations in Martinique, Krakatau, etc., and reasons why economic recovery did not take place about Pompeii. Vegetius' use of army regulations issued by Augustus and later revised is discussed by A. Neumann in *C.P.* (31,1ff.). In *C.W.* (29,81ff.) S. L. Mohler deals with campaign issues in 63 B. C. and the *sentina rei publicae*, while F. L. Jones (*ib.* 89ff.) considers the relations of Crassus and Caesar to Catiline's conspiracy. J. W. Spaeth, Jr. illustrates agrarian legislation of the Gracchi from recently proposed bills in Puerto Rico (*ib.* 70f.) In *P.A.P.A.* (66,xxxvf.) S. LeR. Wallace examines the taxation of the Jews by Vespasian and his successors.

ROMAN LIFE, INCLUDING RELIGION

The Roman's World, New York, 1936, by F. G. Moore, aims to cover the field of life in Roman times, including intellectual interests and the arts. "The Origins of the *Insulae* at Ostia," by P. Harsh, appears in *Memoirs of the American Academy in Rome*, 12,9ff. Many parallels to Roman manners and customs are found in China by Lillian B. Lawler, who contributes "A Classicist in Far Cathay" to *C.J.* (31,534ff.). R. M. Geer has in *C.W.* (29,61f.) a note on ice and snow in cooling drinks. Baby-talk (*e.g. tata*) is remarked upon (*ib.* 191) by Mary Johnston, who finds modern illustrations for Helvia's housewifely economies and Cicero's

laconic announcement of a son's birth (*ib.*). In the field of surgery H. N. Couch has studied the equipment of the surgeon, *P.A.P.A.* (66,xxxvif.). "The Terminology of Witchcraft," in *C.P.* (31,137ff.) is by E. E. Burriess. That the sacred stone in the cella of Jupiter Capitolinus was an aniconic representation of the god, Agnes K. Lake seeks to show (*ib.* 72f.). Louise A. Holland in *P.A.P.A.* (66,xliv) summarizes a paper on "Janus and the Bridge." (See also Pliny's Letters, above).

EPIGRAPHY

An Etruscan inscription is interpreted in *A.J.P.* (57,130ff.), "The Hercules Legend on the Etruscan Mirror from Volterra," by Eva Fiesel. "New Messapic Inscriptions" in *C.P.* (31,193ff.) is by J. Whatmough. A. E. Gordon publishes *On the First Appearance of the Cognomen in Latin Inscriptions of Freedmen*, Berkeley, Calif., 1935. In *A.J.A.* 40, 314ff. M. Stuart has "The Date of the Inscription of Claudius on the Arch of Ticinum."

LATE AND MEDIAEVAL LATIN

In *A.J.P.* (57,137ff.) J. C. Rolfe has a note on Ammianus Marcellinus, 23, 3, 9, with observations on a use of *alius*. H. L. Levy has edited Claudian's *In Rufinum* with introduction and critical commentary (dissertation), Geneva, N. Y., 1935. Eva M. Sanford in *C.P.* (31,71) maintains that Prudentius' hymns were meant to be sung. "Girolamo da Prato and His Manuscripts of Sulpicius Severus," by B. M. Peebles appears in *Memoirs of the American Academy in Rome*, 13, 7ff.

A list of studies in Arnobius since 1875, by K. Guinagh, appears in *C.W.* (29,69f.,152). Among the works on St. Augustine are: Sister Mary Keenan, *The Life and Times of St. Augustine as Revealed in His Letters*, Washington, 1935; her note on classical writers mentioned in the Letters, *C.J.* (32,35ff.); Sister Mary Bogan, *Vocabulary and Style of the Soliloquies and Dialogues of St. Augustine*, Washington, 1935; Sister Catharine Mahoney, *Rare and Late Nouns, Adjectives,*

and Adverbs in St. Augustine's De Civitate Dei, Washington, 1935. Macrobius, *Sat.* 7,8,9ff. is used by W. A. Oldfather in *C.W.* (30,16) to illustrate ancient ideas of cold in the ground. The influence of Vergil on Macrobius is treated by H. C. Coffin in *C.J.* (31,235ff.). J. P. McCormick published his *Study of the Nominal Syntax and of Indirect Discourse in Hegesippus*, Washington, 1935.

Other studies are: "*Penetralia and Penetrabilia in Post-classical Latin*," by R. J. Getty, in *A.J.P.* (57,233ff.); "Notes on the Excidium Troie," by W. A. Oldfather, in *Spec.* (11,272ff.); "Biblical Quotations in the *de Nugis Curialium* of Walter Map," by M. B. Ogle, in *P.A.P.A.* (66,xlii); "Old English Sedulius Glosses," by H. Meritt, in *A.J.P.* (57,140ff.). The possible source of the late (or even modern) proverb *Quem deus vult perdere dementat prius* is investigated by F. W. Householder Jr. in *C.W.* (29,165ff.). To his previous work H. Caplan adds *Mediaeval Artes Praedicandi, a Supplementary Handlist*, Ithaca, 1936. J. C. Russell and J. P. Heironimus have published *Shorter Poems of Master Henry of Avranches Relating to England*, Cambridge, Mass., 1935; H. R. Patch, *The Tradition of Boethius, a Study of His Importance in Mediaeval Culture*, New York, 1935; E. T. Silk, *Saeculi Noni Auctoris in Boetii Consolationem Philosophiae Commentarius*, Rome, 1935 (Papers and Monographs of the American Academy in Rome).

LEXICAL

Of the Olcott Dictionary, *Thesaurus Linguae Latinae Epigraphicae*, two fascicles of vol. 2, by L. F. Smith, J. H. McLean, and C. W. Keyes, have appeared, New York, 1935; two more fascicles are in press. N. W. DeWitt contributes "Semantic Notes to Latin Words" to *C.J.* (31,505f.).

GRAMMAR AND METRE

W. A. Laidlaw in "The Demonstrative Pronouns in the Plays of Terence," *A.J.P.* (57,395ff.), shows that where unemphasized *ille*, etc. follow a short syllable the stem syllable was

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shortened by conversational usage. In "The *dum Proviso Clause*," in *T.A.P.A.* (66,199ff.), E. Adelaide Hahn enquires into the reason for the subjunctive, and why the negative is *ne*. "The Fourth Foot in Vergil," by A. Woodward, appears in *Philological Quarterly* (15,126ff.).

MISCELLANEOUS

Santayana's high opinion of the value of a Latin education is quoted in *C.W.* (29,78) and *C.J.* (31,316) from his tribute to the Boston Latin School in 1935. In *C.W.* (30,3ff.) appears W. K. Prentice's address "The Study of the Classics." "Viscount Morley, Lover of the Classics," in *C.J.* (31,489ff.), is by W. A. Ellis. The wide range of Gray's classical erudition is shown in LaR. Van-Hook's "New Light on the Classical

Scholarship of Thomas Gray," in *A.J.P.* (57,1ff.). "Caesar in American Schools," by E. Owen, in *C.J.* (31,212ff.) shows how little his works were read in our schools until the last century. To his *Literature and Liberalism* (referred to above) N. G. McCrea appends a noteworthy series of 21 "Academic Letters" in Latin, addressed to universities and other learned bodies. J. L. Heller in *C.W.* 29,57ff., writes on survivals of ancient rhetoric in college courses in Speech. In *C.J.* (32,65ff.) R. C. Flickinger gives an account of the Horatian Bimillennium in this and other countries. Classical articles in non-classical periodicals are conveniently summarized in *C.W.* by A. F. Pauli (29, 56,71f., 78f., 175f., 181ff., 191f.), and by J. W. Spaeth, Jr. (*ib.* 29,79f., 120, 135f., 192).

GREEK LITERATURE

BY WILLIAM STUART MESSER

PROFESSOR, DARTMOUTH COLLEGE

LOEB CLASSICAL LIBRARY

Of this library, published by the Harvard Univ. Press, the volumes which have actually appeared since the previous report was written are: *Aristotle, Minor Works*, Vol. 1, by W. S. Hett; *Demosthenes, Meidias, Androtion, Aristocrates, Timocrates, Aristogeiton*, by J. H. Vince; *Diodorus Siculus*, Vol. 2, by C. H. Oldfather; *Plutarch, Moralia*, Vols. 4 and 5, by F. C. Babbitt; and *Sextus Empiricus*, Vol. 3, by R. G. Bury. The following are announced for early issue: *Aristotle, Problems*, Vols. 1 and 2, by W. S. Hett, and *Rhetorica ad Alexandrum*, by H. Rackham (to be included in Vol. 2); *Demosthenes, Private Orations*, Vol. 1, by A. T. Murray (to be completed in three vols.); *Dionysius of Halicarnassus, The Roman Antiquities*, Vol. 1, by E. Cary (the first of six vols.); *Lucian*, Vol. 5, by A. M. Harmon; *Plutarch, Moralia*, Vol. 10, by H. N. Fowler who, with W. C. Helmbold, is continuing the translation left incomplete by the death of F. C.

Babbitt; and *Philo*, Vol. 7, by F. H. Colson.

EDITIONS AND TRANSLATIONS

In the Oxford Classical Texts series has appeared a much-needed and competent recension in *Aristotelis de Caelo, Libri 4*, by J. D. Allan (Clarendon Press, 1936). Of outstanding importance are: *Aristotle's Physics. A Revised Text with Introduction and Commentary*, by W. D. Ross (Clarendon Press, 1936), first complete modern edition, by a leading Aristotelian; *Hermetica, Edited with English Translation and Notes, Vol. 4 with Introduction, Addenda, and Indices*, by A. S. Ferguson (Clarendon Press, 1936), concluding the monumental opus of this title interrupted by the death of W. Scott; *Homeric Hymns* (second edition), ed. by T. W. Allen, W. R. Halliday, and E. E. Sikes (Oxford Univ. Press, 1936), practically a new edition, scholarly introduction, app. crit. and commentary; and *Musaeus, Hero and Lean-*

der; *The Greek Text with Introductory Note, Annotations, Translation, and Index*, by E. H. Blakeney (Oxford, 1935), first complete edition in English. Convenient are: *Euripides, The Suppliant Women. The Oxford Text, with an Introduction and explanatory Notes*, by T. Nicklin (Oxford Univ. Press, 1936); and *The Agamemnon of Aeschylus. A Revised Text with Brief Critical Notes*, by A. Y. Campbell (Hodder and Stoughton, 1936). The following translations are of interest: *The Plays of Euripides. Done into English*, by M. Hadas and J. H. McLean (Dial Press, N. Y., 1936, ten plays; the remaining plays are promised together with an extended introduction); *The Alcestis, An English Version*, by D. Fitts and R. Fitzgerald (Harcourt, 1936), modern verse, with an eye to the stage: *The Bacchae*. Translated, by F. A. Evelyn (Heath, 1936); and *Late Spring, a Translation of Theocritus*, by H. H. Chamberlin (Harvard Univ. Press, 1936), pedestrian and sprightly by turns.

LANGUAGE AND LITERATURE

Liddell and Scott, *Greek-English Lexicon*, Part 9 (σσιλλος-τραγῶα), (Clarendon Press, 1936) has just appeared. *The Syntax of the Genitive Case in Aristophanes*, by J. W. Poultney (Johns Hopkins Press, 1936), is a detailed and careful study. *Greek Lyric Poetry from Alcmæon to Simonides*, by C. M. Bowra (Clarendon Press, 1936) contains brilliant essays by a scholar and a critic. Other valuable essays are: *The Historian Ephorus*, by G. L. Barber (Camb. Univ. Press, 1935); *Hecataeus and the Egyptian Priests in Herodotus, Book 2*, by W. A. Heidel (Amer. Acad. of Arts and Sciences, Boston, 1935); *Panhellenism in Aristophanes*, by W. M. Hugill (Univ. Chicago Press, 1936); *Pindar, a Poet of Eternal Ideas*, by D. M. Robinson (Johns Hopkins Press, 1936); *Homeric Essays*, by a Shewan (Blackwell, Oxford, 1935); and *An Introduction to Sophocles*, by T. B. L.

Webster (Clarendon Press, 1936), suggestive essays on the philosophy and dramaturgy of Sophocles. A *third Century Papyrus Codex of the Epistles of St. Paul*, ed. by H. A. Sanders (Univ. of Michigan Studies, 1935), with Kenyon's ed. of the Chester-Beatty papyri, gives an almost complete manuscript of the Pauline epistles, perhaps a century earlier than the earliest hitherto known. Three fascicles have recently been added to *Monumenta Palaeographica Vetera*, by K. and S. Lake (Amer. Acad. of Arts and Sciences, Boston). A distinct contribution to the textual criticism of Plato is *The Vatican Plato and its Relations*, by L. A. Post (A.P.A. Philological Monographs, No. 4, 1935). Important also is *Studies in the Platonic Epistles with a Translation and Notes*, by G. R. Morrow (Univ. of Illinois Press, 1935).

HISTORY AND CIVILIZATION

Popular histories continue to stream from the presses: *History of Ancient Civilization*, Vol 1. *The Ancient Near East and Greece*, by A. A. Trevor (Harcourt, 1936), a successful synthesis; *History of the Greek World from 479-323*, by M. L. W. Laistner (Methuen, 1936), corrects many fanciful views on things Athenian; *Short History of Greece*, by D. M. Robinson (Huxley House, N. Y., 1936), stresses archaeology; on an obscure period there is *The World of Hesiod: the Greek Middle Ages, 900-700 B.C.*, by A. R. Burn (Kegan Paul, 1936). Several volumes of interesting essays have appeared: *Greek Ideals and Modern Life*, by R. W. Livingstone (Harvard Univ. Press, 1935), declares Greek reason and Christian love necessary for a safe civilization of the future; two volumes of tribute to Professor Murray contain much of interest: *Essays in Honour of Gilbert Murray*, ed. by J. A. K. Thomson and A. J. Toynbee (Allen and Unwin, 1936), and *Greek Poetry and Life. Essays Presented to Gilbert Murray on his Seventieth Birthday* (Oxford Univ. Press, 1936); from the pen of

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Lane Cooper have come: *Evolution and Repentance, Mixed Essays and Addresses on Aristotle, Plato, and Dante* (Cornell Univ. Press, 1935) and *Aristotle, Galileo, and the Tower of Pisa* (ibid.), interesting, provocative, and at times pedantic. A fourth edition of *The Greek Theater and its Drama*, by R. C. Flickinger (Univ. Chicago Press, 1936), adds some few notes only to the third edition. Other volumes are: *Hellas and Hellenism. A Social and Cultural History of Ancient Greece*, by N. P. Vlachos (Ginn, 1936), sound, but not without inaccuracies; *Greek Civilization*, by H. N. Couch (Brown Univ. Book Store, 1936), lithoprinted, a compilation, designed for a one-semester undergraduate course; *Food in Early Greece*, by K. F. Vickery (Univ. Illinois Press, 1936); *Mode in Ancient Greek Music*, by R. Winnington-Ingram (Cambridge Class. Studies, Vol. 2, Macmillan, 1936); *Yale Classical Studies*, Vol. 5, contains essays on Greek art, history, literary tradition, and Parthian art.

PHILOSOPHY AND RELIGION

By Light, Light. The Mystic Gospel of Hellenistic Judaism, by E. R. Goodenough (Yale Univ. Press, 1935), is an important and illuminating contribution to the growing literature on Philo Judaeus. *Plato's Thought*, by G. M. A. Grube (Methuen, 1935), is one of the best in this field; un-critical, but helpful for beginners, is *The Argument of Plato*, by F. H. Anderson (Dent, 1935). *Zeno of Elea: a Text, with Translation and Notes*, by H. D. P. Lee (Camb. Class. Studies, Vol. 1, Macmillan, 1936) puts together an indispensable text of the relevant information on Zeno and his philosophy. The Orphic movement is discussed anew in *Orpheus and Greek Religion*, by W. K. C. Guthrie (Methuen, 1935), and in *Early Orphism and Kindred Religious Movements*, by M. P. Nilsson (reprinted from Harv. Theol. Rev., 28, 1935). A comparative study, not wholly successful, of the Republic and the Philosophy of Right has appeared in *Political Philosophies of Plato and*

Hegel, by M. B. Foster (Oxford Univ. Press, 1935). *Theory of Education in Plato's Republic*, by R. L. Nettleship with an Introduction by S. Leeson (Oxford Univ. Press, 1935) makes accessible a famous essay in a new edition.

ART AND ARCHAEOLOGY

Hesperia, Vol. 5 (1936), contains inter alia *The American Excavations in the Athenian Agora, Ninth Report* (Campaign of 1935), announcing that great enterprise beyond the half-way mark. *Corinth*, Vol. 3, pt. 2: *The Defenses of Acrocorinth and the Lower Town*, by R. Carpenter and A. Bon (Harvard Univ. Press for the Amer. School in Athens, 1936) is a welcome addition to the publications on this site. Reports on other excavations are: *Soknopaiou Nesos, The Univ. of Michigan Excavations at Diml* (Univ. of Mich. Press, 1935), by A. E. R. Boak; *Excavations at Thermi in Lesbos*, by W. Lamb (Camb. Univ. Press, 1936), to discover prehistoric connecting links between Greece and Anatolia. A useful treatise devoted entirely to the Hellenistic period is *Hellenistic Architecture*, by T. Fyfe (Camb. Univ. Press, 1936). A well-printed and indexed study of 699 ostraca is *Greek Ostraca in the Univ. of Mich. Collection*, by L. Amundsen (Univ. Mich. Press, 1935); in the same field is *Les Ostraca Grecs de la Collection Charles-Edwin Wilbour au Musée de Brooklyn*, by C. Préaux (Brooklyn Museum, N. Y., 1935). Indispensable, because at a popular price, is *Shapes and Names of Athenian Vases*, (illustrated), by G. M. A. Richter and M. J. Milne (Met. Museum of Art, N. Y., 1935). R. J. H. Jenkins makes a valuable, though tentative, contribution to a difficult period in *Dedolica. A Study of Dorian Plastic Art in the 7th Cent. B. C.* (Camb. Univ. Press, 1936). *Greek Sculpture*, ed. with an introduction by D. C. Wilkinson (Oxford Univ. Press, 1936), No. 9 in the series *Life and Art in Photograph*, furnishes a convenient collection of the familiar illustrations.

XXV. LITERATURE AND LANGUAGE
SEMITIC LANGUAGES AND LITERATURES

BY M. SPRENGLING

PROFESSOR, THE UNIVERSITY OF CHICAGO

GENERAL

The year 1936 was calamitous in this field. Its ranks were decimated by the loss of W. F. Badé, J. H. Breasted, Leone Caetani, H. Collitz, F. H. Foster, D. G. Lyon, W. F. Notz, among the Americans, and Ignazio Guidi, and Sylvain Lévi among foreign scholars associated with American work in these languages and literatures. American money values and the rising tide of nationalism in Western Asia have combined to cramp, endanger, and, in part, eliminate American archaeological work in this territory. In spite of this, American publication in this field continued to flourish and produce significant work.

PUBLICATIONS

To the centers of publications mentioned last year must be added the Field Museum of Chicago (FM). Among the periodicals the *American Journal of Semitic Languages and Literatures* (AJSL) takes rank among the oldest and foremost. Its quarterly reports on archaeological work in the Near East are the most up to date and comprehensive survey published anywhere; reference to it makes superfluous any detailed statement here. An excellent new periodical, now in its third year is *Ars Islamica*, published by University of Michigan Press. In the field of publications the eastern sector of the Near East has been especially fortunate.

IRAN AND IRAQ

The outstanding book of the year is Henry Field's *Arabs of Central Iraq* (FM). Photographs and tables of anthropological data constitute the bulk of the splendidly printed volume. For the rest Mr. Field himself has little to say, but he has the happy faculty of attracting many and often valuable collaborators. The great collaborator, who breathes life

into the bones of these tables and into the set features of the photographs, is Sir Arthur Keith, with whom we see in these masses a new view of the Arabic world by itself and as connected with larger groups, in which our own and other peoples' origins lie. We can and must include Sir Arthur's work, as he cannot, in his judgment that "this monograph makes a royal gift to . . . fellow workers." Very different in type, but scarcely less significant is George G. Cameron's *History of Early Iran*. In a little volume Cameron sums up in well organized form and in excellent prose all that is now known of Iran "from the dawn of history to the rise of Cyrus." As one reads one regrets that Sir Arthur and Dr. Cameron did not know each other's work while they were writing.

In this connection Ernst Herzfeld's *Archaeological History of Iran* deserves special mention. It is full of unusual information presented in the manner peculiar to Herzfeld. This leads to Sasanian Iran in whose area the Oriental Institute dig at Persepolis made its major find in 1936, a hitherto wholly unknown Parsik inscription of very early Sasanian times, 34 long lines incised on the lower courses of stone of the so-called Kaaba of Zoroaster near Istakhr. A preliminary publication of this document, fully as important as *Paikuli*, is now in press in *AJSL*.

For Iraq, more particularly, contributions of value are A) Archaeological: Eric Burrows, *Ur Excavations. Texts III. Archaic Texts* (British Museum and U. of Penna.), Henri Frankfort and Thorkild Jacobsen, *Oriental Institute Discoveries in Iraq, 1933/34*; Frankfort, *Progress of the Work of the Oriental Institute in Iraq, 1934/5*; Gordon Loud, Frankfort, and Jacobsen, *Khorsabad I.* (all three Or. Inst.); B) Glyptic: H. H. von der Osten, *Ancient Oriental*

Seals in the Collection of Mrs. Agnes Baldwin Brett, (Or. Inst.); C) Philological: S. N. Kramer, *The Sumerian Prefix Forms Be- and Bi etc.* (Or. Inst.); Kramer, *Studies in Sumerian Phonetics* (Archiv Orientalni); A. Goetze, *The Meaning of Sumerian Kishlah* (AJSL); Goetze, *The t-Form of the Old Babylonian Verb* (JAOS); D) Mathematical: Louis C. Karpinski, *New Light on Babylonian Mathematics* (AJSL).

ASIA MINOR

For Asia Minor and its archaeology several large volumes reporting on Oriental Institute campaigns, now definitely concluded, are in the press. As of this year the most noteworthy contributions of American scholarship are philological. Two excellent new works by Ignace J. Gelb, 1) *Inscriptions from Alishar and Vicinity*; 2) *Hittite Hieroglyphs II*, both brought out by Or. Inst., and a new and completely revised edition of E. H. Sturtevant's *Hittite Glossary*, published in Philadelphia, are works of major value. Archaeologically important is Hetty Goldman's, "Preliminary Expedition to Cilicia, 1934, and Excavations at Gözlü Kule, Tarsus, 1934" (*American Journal of Archaeology*).

SYRIA AND PALESTINE

For details on the extremely prolific work of an archaeological nature in this region it is best and safest to refer to the quarterly reports in AJSL. In general the excellent little volume by W. F. Badé, *A Manual of Excavation in the Near East* (Berkeley, Calif.), the last of his works published during his lifetime, was written from and for this region. It merits careful attention on the part of every excavator there. Aside from this the most noteworthy book on the Syrian area is philological. In *A Grammar of the Phoenician Language* (AOS) Zellig S. Harris continues the careful and conscientious tabulation of linguistic data which we have come to expect from him and his master Montgomery.

For Palestine and the Old Testament there is the usual wealth of

material. The attempt to bring to bear archaeological data and theories, developed chiefly by Speiser, on Israel and the Old Testament, is represented by three new books. Well written and most readable is Th. J. Meek's *Hebrew Origins*. Somewhat more popular and placing more emphasis on religion is E. A. Leslie's *Old Testament Religion in the Light of its Canaanite Background*. Between the two stands *Culture and Conscience* by W. C. Graham and H. G. May. The title is not very happy and the Chicago trimmings are so heavy as to make almost unintelligible the subtitle "An Archaeological Study of the New Religious Past in Ancient Palestine." This is unfortunate, because this book is much better than its title. The archaeological material is well selected and clearly presented. With the other two volumes it contains much food for thought for preachers, rabbis, and intelligent laymen. All three of the volumes are lacking in knowledge and appreciation of the desert background. This latter and a fine appreciation of literary values, marred only by just a shade of unduly conservative theological reverence, marks the fine product of Duncan Black Macdonald's maturity and leisure, *The Hebrew Literary Genius*. The most just mean between the two is struck and the most significant Old Testament work of the year is produced once again by the *Hebrew Union College Annual*, Vol. XI. As usual Julian Morgenstern leads the way, opening a new series with *Amos Studies I*. Of the same high quality and at the same time of as much general interest, also, in the same volume are *The Boundaries of Edom* by Nelson Glueck, who this year succeeds Albright as Director of the ASOR at Jerusalem; S. H. Blank's *Studies in Post-Exilic Universalism*; and *Tashlik, A Study in Jewish Ceremonies* by J. Z. Lanterbach. Considered as a whole this volume easily takes rank as the outstanding publication of the year in the Jewish world.

Other notable Judaic contributions of wider interest are M. Waxman's

History of Jewish Literature, which has now reached its third volume; M. Kaplan, *Judaism in Transition*; S. Goldman, *The Jew and the Universe*; and the miscellaneous essays contributed to *Jewish Studies in Memory of Alexander Kohut*.

A similarly excellent collection of articles and essays on the Christian side is found in the volume *From the Pyramids to Paul*—in honor of George L. Robinson. It would be unfair to conclude this survey of American work on Syria and Palestine without mention of Hilma Granquist's *Marriage Conditions in a Palestinian Village* (published in Finland); H. G. May and R. M. Engberg, *Material Remains of the Megiddo Cult* (Or. Inst.); and J. E. Dean, *Epiphanius' Treatise on Weights and Measures* (Or. Inst.).

EGYPT

Naturally in our heritage from James H. Breasted, Egypt fares best. By far the outstanding production of general and artistic interest in this field are the three sumptuous volumes entitled *Ancient Egyptian Paintings*. They are "selected, copied, and described by Nina M. Davies with the editorial assistance of Alan H. Gardiner" (Or. Inst.). Scarcely

less important, though not so attractive to the layman's eyes, are Gardiner, Calverley, and Broome, *The Chapels of Amen-Rē, Rē-Harakhti, Ptoh, and King Sethos* (Or. Inst. and Egypt Exploration Society); H. N. Nelson, *Reliefs and Inscriptions at Karnak, I., Ramses III's Temple within the Great Inclosure of Amon. Part I. and II. Rameses III's Temple within the Great Inclosure of Amon (Part II) and Rameses III's Temple in the Precinct of Mut* (Or. Inst.); Adrian de Buck, *The Egyptian Coffin Texts. I. Texts of Spells 1-75* (Or. Inst.); W. F. Edgerton, *Medinet Habu Graffiti. Facsimiles* (Or. Inst.); W. F. Edgerton and John A. Wilson, *Historical Records of Rameses III. The Texts in Medinet Habu Volumes I and II Translated with Explanatory Notes* (Or. Inst.).

Not in method of publication nor in other ways of the old heritage, but of a new deal is the work of a new star just rising on the Arabistic horizon. A rare study of *The Monasteries of the Fayūm* in mediaeval times and of Coptic Christianity under Islam by Nabia Abbott is now appearing serially in *AJSL*; at the same time it is being gathered into a monograph by the Oriental Institute.

INDO-EUROPEAN LINGUISTICS

BY GEORGE S. LANE

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GENERAL

The leading rôle in Indo-European linguistics, as well as in the other branches of linguistic investigation, continues to be played by the Linguistic Society of America, through its journal *Language* and other sponsored publications such as the series of language dissertations and monographs and special publications.¹

Indo-Europeanists will welcome the first volume of the *Harvard Journal of Asiatic Studies*. While the new publication, as its name implies, is

neither especially Indo-European nor linguistic, it will furnish a much needed receptacle for Eastern and Central Asian studies.

Opportunity for major study in Indo-European linguistics is now afforded by many of the graduate schools of the United States, especially Yale, Chicago, Harvard, Columbia, Princeton, The Catholic University of America, Pennsylvania, Wisconsin, Michigan and Indiana. These universities have definite linguistic departments or divisions. In

addition, courses in comparative Indo-European grammar are frequent adjuncts to language departments in other universities where separate departments are not maintained.

LINGUISTIC INSTITUTE

Of particular moment this year was the auspices of the Linguistic Society of America and the University of Michigan at Ann Arbor in connection with the summer session (June 29-August 21). The Institute was under the direction of Professor Charles C. Fries² of Michigan. The teaching staff drew upon the faculty of the University of Michigan with the support of well known scholars from other institutions, among them Professors E. H. Sturtevant of Yale, Hans Kurath of Brown, and Hayward Keniston of Chicago. In addition, there were special evening lectures principally by visiting professors, notably G. M. Bolling (Ohio), R. G. Kent (Pennsylvania), L. Bloomfield (Chicago), W. von Wartburg (Leipzig). Several luncheon conferences were also held. Attendance, in both numbers and quality of students, was pleasing: 146 students of whom 70 came to the University especially for the Institute.

GENERAL CONTRIBUTIONS

L. Bloomfield in "Language or Ideas"³ (*Lang.* 89ff.)⁴ shows clearly the import of the hypothesis of physicalism for linguistic science. This article is well worth the attention not only of linguists but also of all

¹Cf. also the sections dealing with language in the reports on Germanic, English and Romance languages and literatures. No attempt is made here to include developments in the field of the modern Indo-European languages which are treated in special sections in this *Year Book*. Only articles of primary interest to the Indo-Europeanist are reported here.

²I am indebted to Professor Fries for the following report.

³Presidential address before the combined session of the Linguistic Society and the American Philological Society at the New York meeting, December 28, 1935.

⁴References are to the current (1936) volume of *Journals*. Abbreviations: *AJPh.* = *American Journal of Philology*, *Cl. Ph.* = *Classical Philology*, *JEGPh.* = *Journal of English and Germanic Philology*, *JAOS* = *Journal of the American Oriental Society*, *Lang.* = *Language, Journal of the Linguistic Society of America*, *Am. Y. B.* = *American Year Book*.

psychologists who would dabble with language. O. E. Johnson in "Tense Significance as Time of Action" (*Lang. Diss.* no. 21) strikes out for himself and shows the result of some independent thinking—something not usually found in doctoral dissertations. The problem of what constitutes the phoneme still continues to interest the linguist, Indo-Europeanist or otherwise, cf. e.g. M. J. Andrade, "Some Questions of Fact and Policy Concerning Phonemes" (*Lang.* 1ff.), A. A. Hill, "Phonetic and Phonemic Change" (*Lang.* 15ff.), W. F. Twaddell, "On Various Phonemes" (*Lang.* 53ff.). Unfortunately the controversy started by the latter's monograph *On Defining the Phoneme* (Baltimore 1935), has resulted in charging the pages of *Language* from time to time with needless verbiage.

More directly in the Indo-European field is E. F. Claflin's contribution "Venetic *tolar*, Old Irish *canar* and the Indo-European Injunctive" (*Lang.* 23ff.). W. Petersen attempts to reinterpret the middle forms of the parent speech in the light of the *r*-endings of Hittite and Tocharian in "The Personal Endings of the Middle Voice" (*Lang.* 157ff.). Petersen demonstrates clearly the impossibility of basing any longer our notion of IE verbal inflection on the evidence of Greek and Indo-Iranian.

SPECIAL CONTRIBUTIONS

Indo-Iranian.—The year has been no marvel for Sanskrit studies. The new edition of Perry's *Sanskrit Primer*, awaited expectantly since it was announced by Columbia University Press, proves to be only a corrected reprint of the older impressions. For Iranian we fare better. The Oriental Institute of the University of Chicago gives out news of further finds in Old Persian at Persepolis in *The New York Times* for Feb. 6 (2nd news section p. 8), and R. G. Kent furnishes a short critical history of the scholarship in this field since the beginning in "The Present Status of Old Persian Studies" (*JAOS* 208ff.). The bibliography at the end is especially valuable.

Hittite.—The major publication of the year is E. H. Sturtevant's

Hittite Glossary. This book completes a trilogy⁵ which opens the approach to the Hittite materials for scholars of every allied field. Etymological studies by Professor Sturtevant are to be found in *Lang*. 181ff. and 189, and in *JAOS* 282ff. E. A. Hahn discusses the appearance of the Indo-European pronominal stem *to-* in "Some Hittite Words in *-ta*" (*Lang*. 108ff.). E. Sapir's article "Greek ἀρβήουα, A Hittite Loanword, and Its Relatives" (*Lang*. 175ff.) is more important for Hittite phonology than the title indicates. W. Petersen treats the Hittite "*r*-endings" in the article mentioned above, "Personal Endings of the Middle Voice" (*Lang*. 157ff.).

Tocharian.—The last two mentioned articles by Sapir and Petersen make use of Tocharian phenomena.

Italic.—The non-Italic dialects of Italy are receiving fresh impetus the last few years due to the monumental *Prae-Italic Dialects of Italy* by Conway, Whatmough, and Johnson (cf. *Am. Y. B.* 1934, p. 904). A valuable review of this work by G. M.

Bolling is to be found in *Lang*. 213ff. Whatmough brings forth a second supplement to his Messapic inscriptions (vol. II of *Prae-It. Dial.*) in *Cl. Ph.* 193ff. Conway's Venetic Inscription no. 169 is treated by E. F. Claflin in "Venetic *tolar*, Old Irish *canar* and the Indo-European Injunctive" (*Lang*. 23ff., already cited above under general bibliography), and again by Bolling in *Lang*. 213ff. The eventual interpretation of the Etruscan inscriptions is brought a bit nearer by E. Fiesel's article "X Represents a Sibilant in Early Etruscan" (*AJPh.* 261ff.).

Germanic.—G. S. Lane revives and attempts to elucidate an old problem in "The Labiovelars before *ō* in Germanic" (*JEGPh.* 17ff.). The "Germanic Notes" (*JEGPh.* 389ff.) of A. M. Sturtevant deal chiefly with various topics of phonology in North and West Germanic. For Gothic we have the same scholar's "Gothic Miscellanies" (*AJPh.* 271f.) and "The *bis*-Compounds of Gothic" by G. K. Anderson (*JEGPh.* 27ff.), both concerned with word-formation, and for Norse, Sturtevant's article on "The Confusion of the Neuter *ja*-Declension with the Feminine *in*-Declension in Old Norse."

LIBRARIES

By BEATRICE SAWYER ROSSELL

AMERICAN LIBRARY ASSOCIATION

NATIONAL LIBRARY PLAN

One of the first steps toward putting the American Library Association's national plan for library development into effect was taken June 23, 1936 when President Roosevelt signed the Department of the Interior appropriation bill providing \$25,000 for the establishment of a Federal library agency in the U. S. Office of Education. Functions of the new agency will include development of public, school and other library service throughout the country.

The library planning program, initiated in 1934, showed additional results in written plans for about 30

States, basic library surveys and studies in several others, and in the drafting of legislative programs looking toward state aid, certification of librarians, and increased support for state library extension agencies.

Evidence of increased citizen interest in libraries was seen in state citizens library meetings in Georgia, New Hampshire, South Carolina and Vermont, and in Louisiana where a new state Citizens Library Committee was organized. Through the efforts of Nebraska citizens a book truck was secured for use by the state library agency in state-wide demonstration purposes. Service clubs

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and other lay groups gave libraries aid on an increasing scale.

Not only were appropriations in many libraries being gradually restored to normal, but new appropriations were being made in a number of places. Okanagan and Vancouver Island, two districts in British Columbia, voted to establish regional libraries, similar in organization and service to the Fraser Valley regional library. The first appropriation for county library service in Bexar County, Texas, was voted, the service being given by contract with the San Antonio Public Library. The first public library in York, Penn. (Population 55,000) was opened. In Hawaii, the library at Honolulu carried on its service by land, air and water. Open-air reading rooms or park libraries became increasingly popular. Among libraries providing such facilities were New York, Montclair, N. J., Lake Forest, Ill., Suffern, N. Y., New Rochelle, N. Y., Glencoe, Ill., and Evanston, Ill. Many libraries in southern California and Hawaii have reading rooms in loggias and patios. The idea of park libraries is said to have originated in Spain.

WPA (Works Progress Administration) and NYA (National Youth Administration) rural library service projects were continued or extended to new areas. In some instances, county authorities made appropriations up to \$7,000 to aid WPA county library projects. In Illinois, some money to aid in book purchases was obtained from WPA and NYA funds. State-wide or regional NYA rural library service projects were started in New York, Illinois and Colorado, and many NYA workers have been assigned to such projects set up under WPA. A PWA (Public Works Administration) grant to the University of Virginia for a library building to cost \$950,909 was recently approved. Another will help the University of Oregon to build a library to cost \$463,000. The College of the City of New York will also erect a library with the aid of a PWA grant. There are a number of smaller grants for new buildings and

several grants for additions or re-modelling. Eighty recent school building projects made provision for a library room.

SERVICE OF ESTABLISHED LIBRARIES

The latest complete figures available for public libraries in the United States were given in *THE AMERICAN YEAR BOOK*, 1935, (p. 796). According to reports received by the American Library Association for libraries serving more than 200,000 population, in 1935, the circulation of books in libraries dropped below that figure during the peak years of 1931 and 1932. Non-fiction circulation, however, was 21 per cent greater in 1936 than it was in 1930, indicating that people are using the library much more than they did before the depression for educational purposes.

ADULT EDUCATION

The past year revealed a trend toward more thorough permeation of the adult education motive into everyday practice of libraries. In New York State an Adult Education Committee of the state library association is fostering regional co-operative adult education service among smaller libraries, and giving aid and advice on specific problems. The Board on the Library and Adult Education of the American Library Association has set as one of its primary objectives the encouragement of similar action in other States.

A study of library-forum relationships being conducted by the Board reveals rapidly increasing cooperation between public affairs forums, discussion groups, and libraries. Many such forum groups are meeting in library buildings, some are sponsored by libraries, and much is being done to provide follow-up reading for forum and discussion group patrons.

For the first time, three new courses in the curriculum of the School of Library Service at Columbia University dealt primarily with adult education concepts. One of these is required of first-year students and is an attempt to visualize the library as a functioning part of

the social, educational, and cultural life of a community—a course not in internal techniques but in external community relationships.

A demonstration of great potential importance is the Library Advisory Service for CCC Camps, second corps area, sponsored by the American Association for Adult Education. An illustration of the effective role of high grade library service in another large-scale, self-contained adult education enterprise is afforded in the training program of the Tennessee Valley Authority, a study of which the Board on the Library and Adult Education planned to issue during the year.

RESEARCH

Library Service in a Suburban Area, by Edward A. Wight and Leon Carnovsky, covers a recent survey of the many libraries in Westchester County, N. Y., which revealed markedly unequal reading facilities offered the residents of one of the wealthiest counties in the United States. Unsatisfactory as these conditions were, it should be noted in fairness to the area surveyed that studies in counties elsewhere would undoubtedly reveal worse, rather than better, conditions.

A survey of comments of readers using the New York Public Library (primarily confined to three of the five boroughs of the city), made with the aid of the Graduate Library School of the University of Chicago, showed that while more than two million people used the library for reading and study in 1935, the book stock was inadequate in the circulation branches, buildings were overcrowded for both circulation and reference departments and in need of renovation, and more buildings were necessary.

Based on a study made in Flushing, N. Y., "Reading Habits of Adult Non-Users of the Public Library," by Helen A. Ridgway in the *Library Quarterly* VI, noted among other findings that most non-users of the library who are readers preferred magazines and newspapers to books.

College and university students of

the northern part of the United States are much better supplied with library facilities than those in the south, according to "The Center of Population of Higher Educational Libraries in the United States, 1870-1930," by Walter Crosby Eells, a study published in the *Library Quarterly* VI.

Leon Carnovsky, in the *Library Quarterly* VI, summarized findings on "Book Collections, Library Expenditures and Circulation," in libraries of the Chicago metropolitan area, resulting from a study sponsored by the Chicago Library Club and supplementing his study published in 1935, entitled "Public Library Book Collections" (*Library Quarterly* V).

Several aids for scholars showed marked development during the year. In the field of microphotography such rapid progress is being made that the American Library Association appointed a committee headed by M. Llewellyn Raney of the University of Chicago to keep librarians informed on such matters as projectors, cameras, film treatment and film projects. Beginning in the September, 1935, issue of the *Bulletin of the American Library Association*, the committee is publishing a series of notes and articles as one means of disseminating news promptly.

One notable project under way is being handled by Edwards Brothers, Ann Arbor, Michigan, which will produce on film all books in English published before 1550. Libraries subscribing for complete sets of these films include the New York and Boston public libraries, Harvard University, Yale University, and the universities of Michigan, Virginia, Pennsylvania, Illinois, Washington, California, Rochester, Texas and North Carolina.

More than a dozen union catalogs were in active operation or in preparation. In addition to the Union Catalog at the Library of Congress, some of the projects include the Chicago union catalog of medical works, Cleveland Regional union catalog, the Denver Bibliographical Center, the Harvard union catalog of Scandinavian materials, the Phila-

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delphia union catalog, the Texas union catalog of historical materials and the University of North Carolina—Duke University union catalog. All of these projects, and other metropolitan, state or regional catalogs under way are intended to aid in quick location of books and other items particularly important to scholars.

LIBRARY EDUCATION AND PERSONNEL

The fiftieth anniversary of the beginning of professional education for librarians is being observed during 1936-37. Melvil Dewey on Jan. 7, 1887, opened his School of Library Economy at Columbia College, probably the first school in any country for the professional training of librarians.

In 1935-36, librarians participated in several conferences and studies of groups interested in the improvement of personnel in public service. Schemes of service and classification for libraries and certification of librarians were stressed in an effort to improve personnel in the library profession. At the request of the Carnegie Corporation, Ralph Munn of Pittsburgh made a special report on *Conditions and Trends in Education for Librarianship*.

Training for regional library service and for special types of libraries such as law and hospital libraries was considered an important subject for further study by groups concerned with library education.

An encouraging interest in post-professional study and training of library school graduates was evident. Practical experience in training, including pre-professional training and post-professional experience, or internship, and the possibilities of exchange of library positions were subjects of discussion and study. An institute for librarians in service was held at the Graduate Library School of the University of Chicago in August, 1936, with 92 librarians in attendance. Social trends were chiefly discussed.

Through the generosity of the Carnegie Corporation of New York,

grants for study in library science were made by the A.L.A. Committee on Fellowships and Scholarships to eight American and two Canadian librarians. Fellowships for two library students from Prince Edward Island, two from Porto Rico, and two from New Zealand, were also provided by the Corporation.

The Corporation granted \$10,000 to the Board of Education for Librarianship for studies and investigations in education for librarianship and \$3,000 for special work of the Board. The Board also sponsored a grant of \$19,000 from the General Education Board to Hampton Institute, Fisk University, Prairie View (Texas) State College and Atlanta University, for a three-summer program of instruction for Negro teacher-librarians, designed to meet the recommendation of the committee on Negro colleges and schools of the Southern Association of Colleges and Secondary Schools. As a part of the training of teacher-librarians, a report of a Joint Committee of the American Association of Teachers Colleges and the American Library Association was published by Columbia University Press under the title, *How Shall We Educate Teachers and Librarians for Library Service in the School?*

A marked increase was shown in the number of universities, colleges and secondary schools that gave instruction to students in the use of books and libraries.

While improvement was noticeable in the number of librarians employed, salaries and promotions continued to remain at low ebb, and the number of summer courses and other limited means of professional training for library service, which have a direct bearing on salary and employment conditions, increased rapidly.

FRIENDS OF THE LIBRARY GROUPS

Growing interest was evidenced during the year in the formation of Friends of the Library groups. Among new groups formed around universities or colleges were reported those at Northwestern University,

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University of Buffalo, Duke University, Barnard College, Marietta College, Bates College, Mills College, Yankton College and Iowa Wesleyan College. Others originated among citizens interested in teachers' college and normal school libraries, junior college and high school libraries, and county libraries. One prison and one art museum library group were reported. (For more detailed information, see *Friends of the Library Groups*, American Library Association, 1935.)

GIFTS, GRANTS AND REQUESTS

Many college and university libraries and a few public libraries have received gifts or bequests for new library buildings. Among the larger gifts were \$400,000 to the Southern Methodist University of Dallas, Texas, from Mr. and Mrs. W. W. Fondren; \$300,000 to Denison University, Granville, Ohio from Mrs. George W. Doane and Miss Ida F. Doane; and \$250,000 to Milwaukee-Downer College, Milwaukee, Wisconsin, from the estate of Alice G. Chapman. Gifts of books or of money to purchase certain types of books have been numerous throughout the year.

More than \$7,500,000 were spent by foundations on libraries during the decade 1921-30, according to a study made by Eduard C. Lindeman, published in 1936 under the title, *Wealth and Culture*.

Grants made this year by foundations, in addition to those mentioned elsewhere in this article, included: nearly \$1,000,000 to the Museum of Modern Art in New York City for the development of a film library, by the Rockefeller Foundation; \$30,000, administered by the American Library Association, to aid in purchase by American libraries of the general catalog of the *Bibliothèque Nationale*, given by the Rockefeller Foundation; \$15,000 to the American Library Association for A.L.A. catalog code revision, given by the Carnegie Corporation of New York; \$5,000 to the American Library Association for a survey of resources in southern libraries, by the General Education

Board; more than \$430,000 for various aspects of library development, by the General Education Board; and \$30,000 to the Library of Congress for developing the work of its Division of Orientation, by the Rockefeller Foundation.

APPROPRIATIONS FOR SPECIAL PURPOSES

President Roosevelt allocated \$40,000 for the manufacture of talking books on a Works Progress Administration project. As a result of the allocation, more than 10,000 talking books machines will be made accessible to blind readers. The Pennsylvania Legislature appropriated \$100,000 for rehabilitation of libraries seriously affected by the disastrous floods of the past year in that State.

LIBRARY BUILDINGS

Some of the larger library buildings completed or dedicated during 1935-36 include: Goodell Library, Massachusetts State College, cost \$238,000; Williston Memorial Library, Mount Holyoke College, \$550,000 wing; Potsdam, New York, Public Library and Reading Room, cost, with other buildings which comprise the new Civic Center, \$250,000; Temple University, Sullivan Memorial Library, cost \$450,000; University of Utah Library, cost \$509,000; Washington, D. C., Georgetown Branch of the Public Library of the District of Columbia, cost \$150,000; York, Pennsylvania, Martin Memorial Library, cost \$115,000. The new National Archives Building in Washington (R. D. W. Connor, Archivist of the United States) was occupied in 1935.

AMERICAN LIBRARY ASSOCIATION

Officers for 1936-37 elected at the 58th annual conference of the American Library Association are: Malcolm Glenn Wyer, Public Library, Denver, Colorado, president; Amy Winslow, Enoch Pratt Free Library, Baltimore, Maryland, first vice president; Carleton B. Joeckel, Graduate Library School, University of Chicago, second vice president; Matthew S. Dudgeon, Public Library, Milwaukee, Wisconsin, treasurer. The conference was

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held May 11-16 in Richmond, Va., with 2,800 of the Association's 13,000 members present. The Midwinter Conference was held Dec. 28-30 in Chicago, and the 1937 conference will be held in New York, June 21-26. Headquarters of the Association are at 520 North Michigan Avenue, Chicago, with Carl H. Milam as executive secretary.

A new School and Children's Library Division was created at headquarters, with Jessie Gay Van Cleave in charge.

At the 1935 Midwinter Conference held in Chicago, the Council reaffirmed its interest in state aid for libraries, and approved measures proposed to extend knowledge of and participation in the A.L.A. Retirement Plan. At Richmond, Council approval was given a recommendation that libraries seek Federal aid.

Late in 1935, the Executive Board protested to the Governor and Superintendent of Public Instruction in Pennsylvania dismissal of qualified employees of the State Library to make places for political appointees lacking professional qualifications.

The Newbery award for the most distinguished contribution to children's literature published during the preceding year was given in 1935 to *Caddie Woodlawn*, by Carol Ryrie Brink.

A.L.A. PUBLICATIONS

On the Association's 1936 list of some 25 titles were the following: *Books About Jobs*, a bibliography of vocational literature published for the National Occupational Conference; *The Equal Chance*, a pamphlet illustrated with maps, graphs

and charts depicting the need for widespread library service; *Guide to Bibliographies of Theses*, arranged in three parts—general lists, those in subject fields, and those issued by the institutions accepting the theses; *History of Children's Literature*, a study syllabus with full lists of references; *An Index to Folk Dances and Singing Games*, compiled by the Minneapolis Public Library staff; *Libraries of the South*, the five-year final report of the Association's Regional Field Agent for the South; and *Libraries of Washington*, a survey of the resources and special collections of 269 libraries in the District of Columbia.

OTHER PUBLICATIONS

Some other recent publications included: Bliss, H. E., *A System of Bibliographic Classification* (Wilson, \$7); Fargo, Lucile F., *Preparation for School Library Work* (Columbia University Press, \$3); *Periodicals Directory* (Bowker, \$12); Quigley, Margery C. and Marcus, William E., *Portrait of a Library* (Appleton-Century, \$2); Reece, Ernest J., *Curriculum in Library Schools* (Columbia University Press, \$3); *Right Book for the Right Child, Supplement* (John Day, \$.25); Sharp, H. A., *Libraries and Librarianship in America*; *A British Commentary* (Wilson, \$2); Waples, Douglas, *The Library* (University of Chicago Press, \$1); Waples, Douglas and Lasswell, Harold D., *National Libraries and Foreign Scholarship* (University of Chicago Press, \$1.50). In August, 1936, the Osborne Society devoted an issue of their bulletin to prison libraries.

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COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ACADEMY OF ARTS AND LETTERS, 633 W. 155th St., New York City.
AMERICAN ACADEMY OF ARTS AND SCIENCES, 28 Newbury St., Boston, Mass.
AMERICAN BOOKSELLERS' ASSN., 35 E. 20th Street, New York City.
AMERICAN COUNCIL OF LEARNED SOCIETIES, 907 Fifteenth St., N. W., Washington, D. C.
AMERICAN LIBRARY ASSN., 520 N. Michigan Ave., Chicago, Ill.
AMERICAN NEWSPAPER PUBLISHERS' ASSN., 370 Lexington Ave., New York City.
AMERICAN PHILOSOPHICAL SOCIETY, 104 S. Fifth St., Philadelphia, Pa.
AMERICAN SOCIETY OF COMPOSERS, AUTHORS AND PUBLISHERS, 30 Rockefeller Plaza, New York City.
AMERICAN SOCIETY OF NEWSPAPER EDITORS, Gannett Newspapers, Rochester, N. Y.
ASSOCIATION OF NATIONAL ADVERTISERS, 330 W. 42d Street, New York City.
ASSOCIATED PRESS, 383 Madison Ave., New York City.
BIBLIOGRAPHICAL SOCIETY OF AMERICA, Grosvenor Library, Buffalo, N. Y.
FOREIGN PRESS PUBLICITY SERVICE, 258 Fifth Ave., New York City.
GERMAN CLUB, 5 E. 66th St., New York City.
NATIONAL ASSN. OF BOOK PUBLISHERS, 347 Fifth Ave., New York City.
NATIONAL EDITORIAL ASSN., 134 N. La Salle St., Chicago, Ill.
NATIONAL INSTITUTE OF ARTS AND

LETTERS, 633 W. 155th St., New York City.
NATIONAL PUBLISHERS' ASSN., 232 Madison Ave., New York City.
NEWSPAPER ADVERTISING EXECUTIVES ASSN., 1708 Mariner Tower, Milwaukee, Wis.
PEOPLES INSTITUTE, 70 Fifth Ave., New York City.
UNITED PRESS ASSN., 220 E. 42nd Street, New York City.
U. S. PUBLISHERS ASSN., INC., 386 Fourth Ave., New York City.

AMERICAN LITERATURE

AMERICAN DIALECT SOCIETY, Bascom Hall, Madison, Wis.
AUTHORS GUILD, 9 E. 38th Street, New York City.
AUTHORS LEAGUE OF AMERICA, INC., 9 E. 38th Street, New York City.
CATHOLIC WRITERS GUILD OF AMERICA, 128 W. 71st St., New York City.
NATIONAL ASSN. FOR AMERICAN SPEECH, 174 W. 76th Street, New York City.
SIMPLIFIED SPELLING BOARD, Lake Placid Club, Essex County, N. Y.

LANGUAGE AND LITERATURE

AMERICAN CLASSICAL LEAGUE, New York University, Washington Square, New York City.
AMERICAN ORIENTAL SOCIETY, Trinity College, Hartford, Conn.
AMERICAN PHILOLOGICAL ASSN., State University of Iowa, Iowa City, Ia.
DANTE ALIGHIERI SOCIETY OF NEW YORK, 626 Fifth Ave., New York City.
DICKENS FELLOWSHIP OF NEW YORK, 102 East 52nd St., New York City.
MODERN LANGUAGE ASSN. OF AMERICA, 100 Washington Square E., New York City.

DIVISION XXVI

THE ARTS

ARCHAEOLOGY

BY RALPH V. D. MAGOFFIN

PROFESSOR, NEW YORK UNIVERSITY

UNITED STATES

New Mexico.—The Jemez Cave in Sandoval County not far from the famed Soda Dam, although well known for years to archaeologists, has been hitherto considered as barren ground. But, during the three years past, excavations by members of the School of American Research and the University of New Mexico have shown that, due to the culture material found preserved here in an ideal site, the objects found in the Cave, dating toward the end of Pueblo III, represent the earliest horizon thus far investigated in this southwestern district. Chipped stone instruments, painted pottery, textiles, objects of wood, animal bones, skin, and hide, show pre-Pueblo and Basket maker sporadic occupation, with indications of contact with the San Juan area.

CENTRAL AMERICA

Quirigua.—The Maya "Rosetta Stone" analogically so-called by Sylvanus Morley in his *Guide Book to the Ruins of Quirigua* (Carnegie Institution of Washington), is the *History of Things of Yucatan*, written by the fourth Bishop of Yucatan, Diego de Landa, in 1566. Morley claims, and his claim is not yet successfully disproved, that, as regards ancient Maya writing, "although devised several thousand years later than either Egyptian hieroglyphic or Sumerian cuneiform, it represents a far earlier stage in the development

of writing than either." His conclusions also are exact and noteworthy as to the Maya calendar, the Sacred Year of 260 days (Tzolkin), and the calendar year of 365 days with its 19 months, the Maya system of numeration by position, involving the conception and use of the mathematical quantity of zero, and the comparison of Maya notation with the Roman and Arabic. Morley's work is a *tour de force* by an American scholar.

SOUTH AMERICA

Peru.—Considerable new work and additional proofs of earlier work have been made by the members of the joint expedition, under Director E. L. Hewett, of the University of New Mexico, the University of Southern California, and the School of American Research. The ruins of Cajamarquilla, covering 20 square miles, and those of Pachacamac, covering 11 square miles, were explored and enough found of intense interest to guarantee great further archaeological possibilities. The marvelous stone work in the retaining walls of the fortress of Sacsayhuaman, on a hill top above Cuzco, were re-examined, weighed, and measured. Burial customs of ancient Peru were elaborated from the study of the mummies in the museum of the University of Cuzco. Work on the textiles of the Peruvian highlands has also gained much of illuminative

value from the work of the expedition.

AFRICA

Algiers.—An interesting sarcophagus lately found in a cellar near Port-Gueydon has been deposited in the museum of Algiers. The panels of the sarcophagus show the sculptured treatment of the legend of Bellerophon: his departure from the court of Proetus, the capture of Pegasus, and the triumph over the Chimaera. All the sculptural details are done with a mixture of charming realism and illuminating symbolism.

ASIA MINOR

Tarsus.—Hetty Goldman for Bryn Mawr College has done a fine piece of excavation at Gözlü Kule, the most impressive of the mounds in Cilicia. Lamps, terra cottas, and figurines of Roman work give a splendid array of various objects. A conical *bullä* with an Hittite hieroglyph in its center, surrounded by a cuneiform inscription, is particularly significant in its implications. An Hellenistic Bath was also uncovered. A mask gives the city goddess with her to-be-expected turreted crown and veil. Worthy of comment is an interesting head caricature with the over-large Hittite nose. No Mycenaean level was found, and the "Achaean problem" of the district is not yet settled.

Troy.—Carl Blegen, director of the University of Cincinnati expedition, and the renowned Greek archaeologist Doerpfeld are not yet in agreement as to the levels Troy VI, Troy VIIb, Troy VIIa, and Troy VIIb. But they tend to draw nearer together. Blegen's unparalleled knowledge of pottery seems always to give him the better of such arguments. Blegen has laid bare the finished end of the Sixth City Wall. Very interesting are his discoveries of a hearth circle with its oven and two pot stands, and the stone lined shaft of a well. A number of houses have been excavated and a tremendous amount of broken pottery discovered. Further excavation has been done in

nine different areas in and about the acropolis. The remains were found of a large house dating from early in the First City. Its foundation gives us for the *first* time the ground plan of an important house of this period. Much pottery, a few pieces of bone, stone, and copper, came to light. Six infant burials were also uncovered, two beneath the floor and four outside the house. Part of Troy II was excavated and a vast lot of pottery discovered. One layer of Troy V was also laid bare. A huge building, not yet entirely cleared, seems about to give the best building thus far found belonging to Troy VI. Additional evidence was found to substantiate the destruction of Troy VI by an earthquake.

EGYPT

Luxor.—A French archaeological expedition has been for several years excavating at Toud, some 20 miles from Luxor. A Ptolemaic temple was recently found which had a hypostyle hall and adjoining chambers and sanctuaries. Its walls were covered with hieroglyphic texts covering the cult of the god Mont. The foundations of the temple were recently removed to protect it from the floods. Below it were found four bronze chests filled with treasure. These chests were buried about 1936 B.C. during the reign of Amenemhet II. The treasure, a full account of which is expected soon, is probably the booty brought back from some Asiatic campaign.

Cairo.—A tomb just opened near the Second Pyramid, partly cleared these past two years, now gives much additional information. Fragments of two statues of granite give the name of the occupant of the tomb as Khnum-ba-ef. One chamber was found to be empty, but in the burial chamber there was a limestone sarcophagus. At this writing the sarcophagus has not yet been opened. On the lid, however, were four necklaces of gold and semi-precious stones, several smaller necklaces, and four fine tips of copper covered with gold leaf. On a shelf behind the sarcophagus stood a copper ewer and

on the floor was a fine basin also of copper. In the chamber were also the skeleton of a bull and a number of plates and implements of copper.

GREECE

Athens.—Perhaps the most interesting excavation, certainly the one which excites the greatest thrills of expectation, is that conducted by Dr. T. Leslie Shear in his continued work in uncovering the ancient Agora or market place of Athens. This year covers the latter part of his sixth and the earlier part of his seventh annual campaigns. Shear has found a stoa bordering the south side of the Agora and named it provisionally the "South Stoa." It is a large building, 150 *m.* long and 18.30 *m.* wide. It orients east and west, and lies at a right angle to the Stoa of Attalos, 25 *m.* away. The building is peripteral, with 73 columns on each side and 9 at each end, with about a 2 *m.* intercolumniation. It is Hellenistic in date as is proved by pottery, lamps, and coins, the latest of the last named being 166 B. C. North of the Stoa, Shear found a theatre, 52.50 by 42.50 *m.*, fronting to the north. Its south wall abuts on the terrace wall of the South Stoa. The orchestra, the marble pavement of which is practically intact, is less than a semi-circle. Its constructional date is shown to be of the first century A.D. To identify the theatre is felt to be precarious as yet. Pausanias mentions the Orchestra and the Odeion as the only two buildings of this type in this part of the Agora. The statues of Tyrannicides still stood in the Orchestra in the second century A.D. This building is clearly not shaped appropriately for an Orchestra; it has been, therefore, provisionally called the Odeion. Pausanias said that here was in the Odeion a statue of Dionysos, and in front of it statues of the Ptolemies. Shear found a statue of Dionysos on the east side of this building, and part of a marble base with an inscription dedicated to (Ptolemy) Philadelphos. Work was extended to the eight areas of the American Zone with the

hope of completing the northern part of the Zone, so that work next year can be directed toward the south, that is, to the slopes of the Acropolis and Areopagus. Two objects of special historical interest were found: one a bronze shield captured from the Spartans at the battle of Pylos, the other a piece of the base of the statues of the Tyrannicides. The Greek dedication, with punched in letters, is: "The Athenians dedicate this shield as a trophy taken from the Lacedaemonians in the battle of Pylos." Further finds, in great numbers, have been made this year. Three *stelai* were found on the plateau of the Theseion (the old name Theseion is still used for easier identification of other sites, although it is now recognized that it is the temple of Hephaistos). Two of the *stelai* have decrees of the Salaminians; on the third is a decree of the tribe of Ajax. All three *stelai* are dated and the location of the third one mentioned makes it likely that near it will be found the Eurysakeion (Eurysakes was the son of Ajax). Many fine pieces of sculpture have been discovered in this year's work. A grave *stèle* with the head of a bearded man carved in relief, and wearing a petasos, is of the IV century B.C. It is part of the monument to Athenokles. The upper part of a statue of Athena shows on the strap of the aegis a series of small holes by which were attached bronze adjuncts belonging to the aegis. A statuette of Artemis of Pentelic marble was found in front of the Stoa of Attalos. The draping of the chiton to make a kolpos (pocket), is interesting. Many terra cotta figurines and many lamps from both Greek and Roman periods have been found. One, of anthropomorphic type, is in the shape of a negro's head.

Nike Bastion.—The temple of Nike has been removed except for the foundations, and the work of taking down the bastion is progressing steadily. The southwest corner of the "Pelagian Wall" was uncovered during the removal of the bastion. In the south wall of the

bastion was found another slab from the balustrade. On it were the figure of a winged Victory, and the foreleg and part of the head of a bull.

Delos.—The French have discovered an *insula* or block of four houses and four shops, with streets on three sides and an alley on the south side. The largest house, so-called "House of the Masks," has the finest and most interesting mosaic pavement yet uncovered on the island. This house would seem to have been the headquarters of some club and, from the number of Dionysiac and theatrical subjects in it, it is believed that it was a rehearsal club for actors as well as a depository for theatrical properties. The two previously known types of terra cotta heaters have in this excavation been supplemented by a third type. It has a fire box or hearth, elliptical in shape, with a flat shelf in front which extends out from a supporting foot, and itself supported by braces which branch out fan-wise. Back of the horse-shoe shaped band which braced the receptacle to be heated, is the chimney, balancing the shelf on the front. This heater is portable as the lugs for that purpose prove.

Amphipolis.—American engineers working on a drainage project for the Strymon valley came upon remains of the Roman Via Egnatia and of the ancient bridge over the river. Most notable, however, was the discovery of the fragments of the "Lion of Amphipolis." The lion is of Thasian marble and its date seems to justify saying that it was set up to commemorate the victory of the Amphipolitans and Lacedaemonians under Brasidas over Cleon in 422 B.C. The artistic workmanship is better than that of the Lion of Chaeronea. The pieces of the new find will be put together and the imposing Lion of Amphipolis will be set up beside the road from Salonika to Kavalla.

Knossos.—In the vineyard of Sir Arthur Evans' Villa Ariadne was found a magnificent torso of Hadrian on a level floor with a series of rich mosaics. These and a number of statuary pieces of value give

rare examples of Greco-Roman art in the Hadrianic Age.

Dreros.—Some 50 km. from Candia, Ephor Marinatos has discovered the foundations of a very early temple with its cult images which are of bronze. Three bronze statuettes were also found. The building in which these were discovered is rectangular, 11 m. by 7.20 m. Fragments of vases and some archaic terra cottas were found on a ledge inside. Most important was an altar built of slabs set upright. In the earth in the interior of the altar were a great number of goats' horns and two iron knives, badly corroded. This find must be connected with the Altar of the Horns at Delos around which Theseus danced on his return from Crete, according to Plutarch.

Corinth.—The foundation of a small prostyle temple, provisionally called Temple "F," found with its podium, and near it the top of a well built vault which proved to be a water catch-basin and its spillway, are two monuments found at the eastern limit of the market place area. The cryptoporticus of the South Building was cleared out. The paved entrance through the Stoa was found and laid bare. Perhaps most important is the discovery and clearance of a room with a Fountain and side chambers. So many of the original pieces of this building were found that it has been possible practically to restore it in its pristine splendor.

Marathon.—In connection with the topographical studies of Professor Sotiriades in the Plain of Marathon, in which he last year identified the site of the Sanctuary of Heracles, he found an enclosure, 150 m. in extent, on the northern edge of Mt. Agrieliiki, which is certainly the site of the encampment of the Athenians before the battle of Marathon. He found also the walls of the Mycenaean acropolis of the ancient city of Marathon. From his investigations in the surrounding mountains and plain, Sotiriades has been able to set down conclusions which seem most probable as to the movements

of the Persians after they disembarked upon the Plain.

IRAQ

Sargonid Dynasty.—On a copper spike was recently found an inscribed legend which gives us the name of a new king of the Sargonid dynasty, dating in the middle of the third millennium B.C., "Lilul-Dannum, King of Akkad."

ITALY

Cervetri.—The famous Etruscan sarcophagus bought by the British Museum in 1873 has been branded as a forgery by Penelli. It has been withdrawn from view for at least the time being.

Ciro.—Six fine bronze axe heads stacked in pairs, belonging to Iron Age I, are very important finds.

Lucania.—The correctness of literary mention has again been proved. Both Strabo and Pliny say that a sanctuary was founded by Jason and the Argonauts on the left shore of the river Sylarus (Sele) in Lucania, a half mile or so back from the sea. It was a Sanctuary of Hera, a so-called Heraion, and in Roman times it was so rich that Cilician pirates came to plunder it. This Heraion has been found by the Italian archaeologists Zancani and Zannotti-Bianco. The foundation shows a peripteral Doric temple with pronaos and cella, dating at the end of the VI century B.C. It much resembles the Temple of Ceres at Paestum. Below the temple was found a stratum of very archaic Proto-Corinthian material. The necropolis of a local village was found at the close of this year's campaign and will be excavated next year.

Rome.—It will be remembered that the discovery of a skull in the gravels of the Anio in 1929 gave evidence of Early Man. Late in 1935 a second skull was found. Both have a decided orbital arch, a wide and rounded nasal orifice, a high, straight face, and small mastoid process. They date at about 40,000 B.C. The vast plan that has been carried on for several years for the systemization of the streets in preparation for

the 2000th anniversary of the birth of Augustus, to be celebrated in 1937 and 1938, is now nearly complete. The modern houses near the Forum Boarium have been removed, and the two ancient temples there are now to be seen to advantage. Many of the ancient columns have been re-erected on the terrace of the temple of Venus and Rome. The best piece of sculpture recently added to the National Museum is the "Warrior of Capetrano," a VI century B.C. work. Near the Basilica Aemilia was found a large part of a marble frieze with representations of episodes from early Roman history.

Ostia.—The indefatigable director of excavations, Dr. Guido Calza, has discovered that outside the wall, on the side toward Laurentum, the cemetery is one of two levels, one of burial about 150 A.D., the other of 200 A.D. Crematories have been found also in considerable numbers.

PALESTINE

Tell ed-Duweir.—The Lachish Ostraca found by Starkey, the script of which is Old Hebrew cursive, the language pure Biblical Hebrew, although as yet undateable, prove that the towns of the Negeb and Shephelah were not yet severed from the territory of Judah after the suppression of Jehoiakim's revolt in 597.

Jericho.—Péle Vincent claims that recent excavations confirm his date for the capture of the city as about 1250 B.C. Albright proposes 1360-1373. Garstang continues to hold to 1411-1375. Garstang's discovery of two groups of early Neolithic statuettes carry the age of Jericho back so far that it must be regarded as one of the oldest settled communities in Palestine.

Megiddo.—The Oriental Institute of the University of Chicago has worked at the mound of Megiddo for several years. Work this year has shown that the site was occupied continuously from about 2000 B.C. to its final abandonment. The "Eastern Temple" was begun about 1500 B.C.; it was destroyed by Thutmose III. In the many house burials excavated, a large amount of

beautiful jewelry, not yet published, was found.

PERSIA

Persepolis.—Inscriptions of Xerxes were found by the excavators of the Oriental Institute. One inscription is on stone tablets in Elamite, Babylonian, and Old Persian cuneiform. Its historical importance is in the list of the provinces over which Xerxes ruled. The other inscription gives the geographical limits of Xerxes' empire. It was in four copies, two on gold, two on silver. They were in limestone boxes at two of the corners of the audience hall of the palace. The text is the same as that on the gold and silver tablets found at Hamadan in 1926.

SYRIA

Antioch-on-the-Orontes.—It has taken three years of excavation to get the topography of the city delimited. The theatre once located, as it now has been, will give the key to the city plan, as many literary passages mention streets and monuments in reference to the theatre. Three aqueducts have been identified, one bringing water from Daphne to the Baths of Caligula and two built respectively by Trajan and Hadrian. The plan of a Roman Bath, made possible by the excavations, shows the hot, warm, and cold, bath rooms, the anointing and rubbing room, social halls, locker room, latrine, and dressing rooms.

Ras Shamra.—Private houses are found with as many as 20 rooms. Each house had a central court. Bathrooms were on the lower floor, with either terra cotta or stone tubs. A burial vault was found beneath each house. The skulls prove the people to have been non-Semitic.

Byblos.—Donald F. Brown has shown that the famous scarab of Byblos, with its combat scene in-taglio, is a late archaic work with affinities both to the Near East and Greek mainland artistic conceptions. It is of Phoenician origin in its material and facial features; of Greek origin in its spirit of composition and its workmanship.

MUSEUMS

Metropolitan Museum of Art.—Objects of special value added to the Museum's collection during the year are: A V century B.C. engraved Etruscan gem (agate) with a satyr playing a lyre; marble Maenad, a Roman copy of a Greek relief of the late V century; commemorative scarab of Amen-hotep III, issued in 1422 B.C.; the Greek bronze statuette, known as the Haviland Bronze, of the IV century; several pieces of Syrian enameled glass, and a beautiful Athenian grave relief of about 400 B.C., of a woman and her attendant.

British Museum.—The Museum announces the binding of the Codex Sinaiticus in two volumes, sewn on six double bands of hempen cord with unbleached linen thread, without clasps, and in alum-tawed goat skin leather.

Museum of Fine Arts, Boston.—A small fragment, 29 cm. by 23.5 cm., of a relief showing the head and body to the waist, the left hand holding a two-handled jug, is believed to be a portrait of the Roman poet Horace. If true, it will be our only portrait of the poet laureate of the time of Augustus. The Museum has also acquired the head of a youth, in Greek island marble, undoubtedly a Greek original of about 480 B.C., also a bronze votive chariot wheel, found near Delphi, bearing on the fellow an inscription in the Phocian dialect. Very noteworthy is a Demareteion, one of the most beautiful of all coins. Thirteen of these coins have been found. One has disappeared. This one must be ranked with the three best ones—those in the British Museum, at Berlin, and in the Jameson collection in Paris. The obverse of the Boston coin is from the same die as the Jameson specimen; the reverse is that of the coin in Berlin.

NECROLOGY

Frank Cole Babbitt, Hobart Professor of Greek at Trinity, Hartford, died on September 21, 1935.

MELLON GIFT OF ART TO THE NATION

He had charge of the first work in clearing the Greek theatre at Corinth.

Grant Showerman, professor of Latin at the University of Wisconsin, died Nov. 13, 1935. He was annual Professor at the American School in Rome in 1922-23, and director of the summer sessions there from 1923 to 1932.

James Henry Breasted, America's greatest Orientalist, Director of the Oriental Institute of the University of Chicago, died Dec. 2, 1935. He coined the phrase "The Fertile Crescent," a term accepted by all

historians and archaeologists on the Near East.

David Gordon Lyon, founder of the Semitic Museum at Harvard, and its Curator from 1906, died Dec. 4, 1935. He was Director of the American School for Oriental Study and Research in Palestine in 1906-07.

William Frederic Badé, of the Pacific School of Religions, died Jan. 4, 1936. His greatest work was the excavation, begun in 1926, of Tell en-Nasbeh which he successfully identified as the Biblical Mizpah.

MELLON GIFT OF ART TO THE NATION

BY FLORENCE SEVILLE BERRYMAN

THE AMERICAN FEDERATION OF ARTS

OFFER AND ACCEPTANCE

A national gallery of art, probably the greatest single cultural contribution to the United States of America throughout its history, was offered by Andrew W. Mellon of Pittsburgh, and accepted by President Roosevelt (pending action by Congress) during the last ten days of 1936. Mr. Mellon, formerly Secretary of the Treasury (under three Presidents) and Ambassador to the Court of St. James's, revealed plans not only to give his collection of works of art valued very conservatively at \$19,000,000, to the people of the United States, as a nucleus for a national gallery of art, but also to erect a building to house them, and provide an endowment fund for salaries of a director and his staff and for possible acquisitions.

DETAILS OF THE OFFER

Details of the "very wonderful offer" as President Roosevelt characterized it, were revealed in an exchange of four letters between Mr. Mellon and the President, beginning Dec. 22 and made public Jan. 3, 1937. The offer was formally set forth in Mr. Mellon's letter of Dec. 31, 1936, in which he outlined definite terms and conditions concerning the collection and its building to be

given to the Smithsonian Institution or to the United States Government. He made nine specifications: first, that the gallery shall not bear his name, but shall be known as the National Gallery of Art or some similar appellation, identifying it as a Federal institution (and hence giving it a character to attract other gifts of high quality which might not be made to a gallery nominally commemorating the donor); second, that it shall be erected from plans drawn by John Russell Pope, architect, subject to the approval of the Commission of Fine Arts, at the estimated expenditure of \$8,000,000 or \$9,000,000 to be borne by the donor; third, that the building shall be located in Washington on the north side of the Mall between 4th and 7th Streets northwest, with frontage on Constitution Avenue, with a specified space reserved for future extensions of the National Gallery; fourth, that the regents of the Smithsonian Institution be authorized by Congress to take over the project when completed; fifth, that the upkeep of the gallery and other administrative and operating expenses (save for salaries of a director and his staff) shall be provided for annually in appropriations made by Congress, as for the other units of

the Smithsonian Institution; sixth, that the gallery and its property shall be managed by a self-perpetuating board of nine trustees, of whom five shall be named originally by the donor, with the approval of the Smithsonian Institution, the other four to be *ex officio* members and government officials; seventh, that this board shall be empowered to accept other gifts and bequests for the gallery, and eighth, that the board shall provide that only works of art of a similar high standard of quality of those in the present collection shall be acquired, whether by gift or purchase; and finally, that the erection of the building shall proceed immediately upon the acceptance of the offer and passage of necessary legislation by Congress.

CONTENT AND QUALITY OF THE COLLECTION

Mr. Mellon has long planned to give his collection to the nation, as was first announced by his attorney in the trial of his appeal from an extra income tax assessment in 1935 (mentioned in the 1935 review of Painting in THE AMERICAN YEAR BOOK). In 1930 Mr. Mellon bought 15 pictures for \$6,654,000 from the U. S. S. R., among them five of the greatest treasures from the famous Hermitage Collection in Leningrad, founded by Catherine the Great. These five paintings, which figured in the tax case, alone cost \$3,247,695 and are regarded as among the world's greatest masterpieces. They are Raphael's "Madonna of the House of Alba," which Mr. Mellon purchased for \$1,166,400; Botticelli's "Adoration of the Magi," \$838,350; Perugino's triptych "Crucifixion with St. John, the Magdalen and St. Jerome," \$195,615; Jan Van Eyck's "Annunciation" \$503,010; and Titian's "Toilet of Venus," \$544,320.

Part of the testimony during the trial included the statements of Dr. William R. Valentiner, director of the Detroit Institute of Arts, that the Mellon collection was "far superior to that of any museum" and of Lord Duveen of Millbank that it was "the greatest collection ever as-

sembled by an individual collector." The latter recently said that \$50,000,-000 would be a more accurate estimate of its value.

THE RENAISSANCE

The collection comprises three great groups, each of which would be an extraordinary gift in itself. The first contains approximately 100 pictures of highest quality, representing nearly all of the greatest masters of western European painting, beginning with the Florentine Cimabue (1240-1302) and a Byzantine forerunner, circa 1200. Included among the Italian Renaissance paintings, the most magnificent portion of Mr. Mellon's collection, are the only Masaccios still in a private collection; three exceptional Raphaels, the above-mentioned Alba Madonna, "St. George and the Dragon," an earlier work also purchased from the Hermitage for \$745,000, and the "great" Cowper Madonna, which Mr. Mellon bought in England for \$800,000; (there is also a "small" Cowper Madonna in the Widener collection, Philadelphia). In addition to the "Toilet of Venus," three other paintings by Titian are included, a Madonna and two portraits, one of a lady in a green dress, having cost \$550,000. A very important 15th century Florentine portrait is that of a man by Andrea del Castagno, the only portrait by this painter among his 28 existing paintings, of which only two others are owned in the United States. Mr. Mellon purchased the Castagno and two others, "Rest on the Flight into Egypt" by Gerard David, and "Holford Landscape" by Meindert Hobbema, from the collection of J. P. Morgan of New York City, who sold 13 of his important paintings and his collection of miniatures in 1935.

Persons familiar with great collections dispersed during the past decade or more, recognize that some of their choicest masterpieces were acquired by Mr. Mellon. His "Madonna and Child" by Antonello da Messina, for instance, (one of that artist's finest paintings) was once in the famous Benson collection of Italian masterpieces, brought from

MELLON GIFT OF ART TO THE NATION

London in 1927 by the then Sir Joseph Duveen. Da Vinci and Michelangelo are perhaps the only outstanding omissions in Mr. Mellon's Renaissance collection, works by them being unobtainable at any price.

DUTCH, SPANISH AND BRITISH GROUPS

There is a magnificent group of 17th century Dutch paintings, including six Rembrandts, among them a superb self-portrait, for which Mr. Mellon paid \$575,000; 3 Vermeers (which cost a total of more than \$1,000,000.00); 4 Hals, and various "Little Masters"; several outstanding early Flemish paintings in addition to the above-mentioned Hermitage Van Eyck, among them Van der Weyden's "Portrait of a Lady" as well as famous works by Rubens and Van Dyck. There are several paintings each by the great Spanish masters, El Greco (whose "St. Ildefonso Writing" is among the important works in the collection), Velasquez and Goya. The great British masters of the 18th and early 19th century, Reynolds, Gainsborough, Lawrence, Raeburn, Romney, Hoppner, Constable and Turner, are represented by notable portraits and landscapes. Paintings by the great Germans, Dürer and Holbein, are included, the latter's portrait of King Edward VI of England as a child being one of the outstanding masterpieces of the collection; another is Lancret's portrait of "Mlle. Camargo Dancing," in the group of French masters.

RENAISSANCE SCULPTURE

The second unit in the Mellon collection is composed of Renaissance sculpture, including most of the works formerly in the Dreyfuss collection in Paris, which was the greatest group of Renaissance sculpture outside of Florence, and had been built up over a period of more than a century. It contains sculpture by such masters as Sansovino, John of Bologna, Donatello, Verrocchio, Desiderio da Settignano, and Luca Della Robbia.

AMERICAN PORTRAITS

The final portion of the Mellon gift is that of historical American portraits collected by Thomas B. Clarke during many years, an induplicable panorama of American painting and history, of the highest quality. (See review of Painting, p. 843.) Including much of the "cream" of our own school of painting, from the early 17th century to the mid-19th, this part of Mr. Mellon's collection inspires the greatest enthusiasm in some critics. It is Mr. Mellon's plan that these historical portraits shall eventually become part of a national portrait gallery.

SIGNIFICANCE OF THE GIFT

In one of his letters to Mr. Mellon President Roosevelt expressed what will doubtless be the nation's sentiment: "For many years I have felt the need for a national gallery of art in the capital. Your proposed gift does more than furnish what you call a 'nucleus,' because I am confident that the collections you have been making are of the first importance and will place the Nation well up in the first rank."

The United States is the only great nation still without such a national collection in its own building, comparable to Great Britain's National Gallery in London, France's Louvre, Germany's Kaiser Friedrich Museum, Berlin, and those of Italy and Spain. For nearly a century, cultural organizations and individuals in the United States have endeavored to bring a National Gallery into existence. It had its beginning in 1840, was given legal status in 1906, and now is composed of a number of collections in the Natural History Building of the National Museum, and the Freer Gallery of Art, all given to the nation by public-spirited citizens.

At the annual meeting of the Board of Regents of the Smithsonian Institution, on Jan. 14, 1937, over which Chief Justice Charles Evans Hughes presided, a resolution was adopted conveying to Mr. Mellon their "deep sense . . . of the

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generosity and patriotic character of | Nation" and accepting the proposal
this munificent cultural gift for the | in principle.

PAINTING

BY FLORENCE SEVILLE BERRYMAN

THE AMERICAN FEDERATION OF ARTS

GENERAL

Varied events and controversial issues made 1936 a lively year in the field of painting. In the first category, results of the United States Government's great program of fostering the arts (predominantly painting among the spatial arts) were of greatest importance; while the outstanding issue involving painting, was undoubtedly the rental policy adopted by the American Society of Painters, Sculptors and Gravers in 1935.

The Government was able to present for public inspection, extensive achievements in each of its several projects: work under the permanent Section of Painting and Sculpture of the Treasury Department's Procurement Division (financed by specific allotments for the decoration of each building), the Treasury Relief Art Project (also a part of the Section of Painting and Sculpture, but financed out of the Treasury allotment of Works Progress Administration funds) and the Federal Art project, which is under the direction of the Works Progress Administration. "Quality" is emphasized in the Treasury projects, "relief" in the Federal Art Project; but despite the social attitude of the last, quality is apparent in much of the work produced under it.

THE TREASURY DEPARTMENT PAINTING PROJECTS

Government Murals in Washington.—Of many works completed under the two Treasury projects, murals had been installed in their permanent locations in 16 States and the District of Columbia. Of the largest and most important undertaking available when the Section of Painting and Sculpture began, decoration of the new Post Office and De-

partment of Justice buildings in Washington, D. C., the following murals were in place: five panels by George Biddle and 12 frescoes by Henry Varnum Poor, in the Justice building, and two frescoes by Reginald Marsh for the Post Office, depicting the transportation of mail. Mr. Poor's decorations in the Hall of Pardons represent incidents in the life of a prisoner; his others, the functioning of the Divisions of Customs and Lands. Social justice is the theme of Mr. Biddle's series.

Federal Murals in the States.—Other murals executed under the program of the Section of Painting and Sculpture and installed before Dec. 4, 1936, were as follows: one panel each, by Frank Bergman and Moya del Pino in the Stockton, Calif. Post Office; one panel by Byron Ben Boyd in the Osceola, Ia. Post Office; two panels by Henrik Martin Mayer in the Lafayette, Ind. Post Office; decorations for an entire room, by William B. Rowe in the Marine Hospital at Buffalo, N. Y.; one fresco by Conrad Albrizio in the De Ridder, La. Post Office. In Pennsylvania, one fresco by Howard Cook in the Pittsburgh Post Office; one panel by Richard Lahey in the Post Office at Brownsville, and one by F. Luis Mora in the Catasauqua Post Office. In addition, there were also installed in various cities throughout the country, or completed in situ, murals single or in series by 16 different painters mentioned in the 1935 review as winners of some of the earliest competitions organized by the Section of Painting and Sculpture.

Work produced under the Treasury Relief Art Project is for Federal buildings, old or new, which have no money available for decoration, but have space suitable for murals and

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sculpture. Murals installed as of Nov. 30, 1936, under this project, include: Six fresco lunettes by Charles Kassler in the Beverly Hills, Calif. Post Office; all-over murals by Aldis Browne in the library of the Coast Guard Academy at New London, Conn.; by George S. Hill in the recreation room and officers' mess of the Coast Guard Air Station at St. Petersburg, Fla.; by Charles Turzak for General McCoy's private office and corridor leading to it in the Main Post Office, Chicago; by Julio de Diego in officers' cafeteria at Fort Sheridan, Ill.; by Orville Carroll on the walls of the reception room in the Marine Hospital of Louisville, Kentucky; by Xavier Gonzales in the public library of the Hammond, La. Post Office; by Frank Romanelli in two small rooms of the Marine Hospital at Buffalo, N. Y. Decorative painting by Paul Wilhelm in the U. S. Industrial Reformatory at Chillicothe, O.; mural by John R. Ballator in the public lobby of the Post Office at St. John's, Ore. Thirty-two other mural projects under the Treasury Relief Art Project were completed and expected to be installed within two months.

Exhibition of Winning Designs.

—The Treasury Department Art Projects held a comprehensive exhibition of winning designs, models and completed murals (and sculpture) at the Whitney Museum of American Art, New York City, in October, and in November, the same show augmented was exhibited at the Corcoran Gallery, Washington, D. C. The "American Scene" was the theme of the work; but this in no wise lessened the variety, as the artists generally stressed local scenes and history, producing work highly appropriate to the respective locations. "Whaling Vessels" are the subjects of Thomas La Farge's murals for the Post Office at New London, Conn. for instance; and Spanish Colonial themes for the murals by James Redmond for the Post Office at Compton, Calif. These exhibitions received praise in the press and in periodicals on art for the high quality of the work shown. Fears expressed when

the projects were begun, that they would put a large quantity of inferior work in Federal buildings, were seen to be unfounded. The exhibitions offered unique opportunities to see the Government-sponsored work, which can never again be reassembled.

Program Publications.—The Treasury Department Art Projects at the same time issued a handsome, non-profit publication entitled *Art in Federal Buildings: Volume I, Mural Designs 1934-'36*, an illustrated record of the new program with a comprehensive history of it by Edward Bruce, general director, and a review of American mural painting prior to the Program by Forbes Watson, technical advisor. Financed by funds raised from private sources, and published by Art in Federal Buildings Inc., it is the first of a proposed series of such publications to deal with the Treasury Department's program; a primary purpose of the series is to win private commissions for the artists who have worked for the Department. Persons who desire statistics as to number of competitions held in each class, number of artists employed, and many other phases, as well as specific information about, and illustrations of, all the mural designs approved up to the date of going to press, will find this the perfect reference book.

Other Treasury Project Paintings.—In addition to mural decorations for Federal buildings, the Treasury Relief Art Projects has also engaged artists from all parts of the country to paint small oils, water colors etc. which are variously allocated. Five traveling exhibitions of these individual pictures have been making a circuit of museums and art societies. The Treasury Department Art Program, furthermore, cooperates with all other Government departments by supplying or executing murals and other works for various usage.

W.P.A. ART PROJECT

Exhibitions.—The Federal Art Project, under the Works Progress Administration, also held a compre-

hensive exhibition in New York City, beginning in September, at the Museum of Modern Art. Nearly 500 works shown, completed during 1936 for the Government under this Project, included murals, oil paintings and other types selected from the production of approximately 5,300 artists and teachers of art, employed by F.A.P. The exhibition was entitled "New Horizons in American Art" and was the subject of an excellent catalogue with an essay by Holger Cahill, national director of the Federal Art Project. Prior to the New York exhibition, Washington had an opportunity (in June and July) to see a smaller show of 100 works of the same classes, at the Phillips Memorial Gallery; and in November, a selection from the New York exhibition at the U. S. National Museum. For the exhibition of the work of its artists, the Federal Art Project opened art galleries, beginning with one in New York City the end of 1935, and followed by others in Chicago, Boston, and Philadelphia.

Employment and Costs.—The Federal Art Project has a program in 42 States, but more than a third of the total number of persons employed, have been working in New York. Less than 45% of the total employed are workers in the fine arts. Artists receive an average of \$23.86 per week. Labor costs of murals under Government administration have been placed at \$5 to \$8 a square foot, as against the commercial rate quoted at \$15 to \$20.

NON-GOVERNMENT MURAL PAINTING

Texas Exposition.—Not all of the superb murals completed during the year were created under Government auspices. Numerous buildings of the great Texas Centennial Exposition which opened in June in Dallas had mural decorations. Carlo Ciampaglia, Julian Garnsey and Pierre Bourdelle had charge of producing 20,000 square feet of murals, including painting, bas reliefs and friezes. Mr. Ciampaglia decorated the buildings of Agriculture, Transportation, Administration, Poultry and

Foods. For the first mentioned, he painted a mural 60 feet long by 19 high, representing the preparation of the soil, and a large lunette depicting pollenization in nature; in the Foods building, a mural symbolizing products of the earth, and four lunettes showing the various types of animals, fish and fowl eaten by man; the Poultry building had a lunette of various fowl; six murals interpreted "the progress of transportation" in the Transportation building, while another mural occupied a 61-foot niche on the facade of the Administration building. Eugene Savage executed a series of large murals commemorating Texas heroes in the \$1,000,000 State of Texas building.

Kansas City.—Ross Braught completed a mural for the Music Hall of the Auditorium in Kansas City, which was placed at the entrance. Representing the myth of Mnemosyne and four of the Muses, it is a fresh and vital interpretation of ancient symbolism.

Detroit.—A series of fresco murals was painted by John Carroll for the Detroit Institute of Arts through the gift of Mr. and Mrs. Ernest Kanzler. The frescoes comprise three lunettes for the vaulted corner room in the American Wing; they have as theme "Morning," "Afternoon" and "Evening," the artist's interpretations centering around romantic figures of young girls.

Springfield, Mass.—"The Doctor—Down Thru the Years" a mural in six life-size panels painted by Harriet Ellis of Springfield, Mass. on commission from the Springfield Medical Society as a background for its booth at the state medical convention, was later presented to the Springfield Academy of Medicine as a memorial to deceased physicians of the city.

THE RENTAL FEE CONTROVERSY

Economic and Political Aspects.—Controversies involving American painters which gained increasing momentum during 1936, were economic and political in character, contrasting with the year before, which was

marked by violent public rejections of certain works. The struggle between the American Society of Painters, Sculptors and Gravers on one hand, and museums, art associations and similar public institutions over the Society's exhibition rental policy (adopted on the affirmative vote of 87 members out of 97 who voted) which had only begun to register by the end of 1935, became, perhaps, the most important issue of 1936. Early in the season of 1935-36, the Worcester Art Museum, later the Pennsylvania Academy of Fine Arts, Philadelphia, and in the spring, the Cincinnati Art Museum, held their large annual exhibitions without the participation of the Society's members, because the museums refused to pay the rental fee (\$1 to \$10 for each painting, according to its value). On the other hand, a number of museums complied with the demand for rentals: the Whitney Museum of American Art, and the Roerich Museum, both in New York City; the Buffalo Museum, the San Francisco Museum, the Art Gallery of Grand Rapids, Mich., and the University of Wyoming.

Venice Biennial Episode.—The next clearest-cut victory for the American Society of Painters, Sculptors and Gravers was the cancellation of American participation in the Venice Biennial. The Grand Central Art Galleries of New York City, which erected an American Pavilion in Venice some years ago in order that American art might be shown regularly in this great international exhibition, undertook to sponsor the American contribution again this year. But early in the spring, Erwin S. Barrie, director of the Galleries, announced that plans were cancelled, after the Society had refused to permit its members to exhibit without a rental fee, an action involving approximately one-third of the 79 artists (mostly painters) selected by a distinguished jury as the outstanding artists today. Some of them had also boycotted the Venice Biennial, because of its being under the auspices of a Fascist nation; hence the absence of American art in Venice was

due to political as well as economic reasons.

Arguments For and Against Policy.—Impressive arguments both for and against the rental policy were published, notably in *The American Magazine of Art* and *The Art Digest*. A strong argument for it is, that as the economic collapse came and deepened, all sources of income dried up more or less completely for artists, yet the demand for loans of paintings for exhibition are large, indicating that they must have a considerable "entertainment" value; hence the painters should be entitled to some financial remuneration, same as performers on stage or screen. Among the arguments against the rental policy were that few of the museums with their present incomes can afford it; that they offer the artist his best opportunity for contact with the general public; that standards of the big exhibitions will suffer; space on exhibition walls will be taken by inferior artists, as it seemed certain that the museums, if required to pay a rental fee, would include in their shows only those whose fame might justify the expense from the standpoint of attendance; that museums are incorporated to promote the arts rather than the artist, and could not afford to spend their entire exhibition budget for only one kind of show (contemporary American); finally, that "it is childish to suppose that patrons of art could be forced to pay rent for art that . . . they are not sufficiently interested in to purchase to a great extent."

CARNEGIE INTERNATIONAL EXHIBITION

It was difficult to discern the effect of the rental policy on the Carnegie International, Pittsburgh, which opened in October. Only six nations were represented: the United States, England, France, Germany, Italy and Spain, but the total number of paintings (323) was not much less than last year. Of these, 95 were by Americans; 20 American painters appeared for the first time, which large number of newcomers may have been due in part to the rental policy boy-

cott: 23 invited members of the American Society of Painters, Sculptors and Gravers had refused to exhibit in the International.

Leon Kroll (who with a number of other painters had resigned within the year from the Society) won the Carnegie's first prize with his "Road from the Cove," the only canvas he had completed during the year, having been occupied almost exclusively with his mural in the Department of Justice building, Washington. The Carnegie second prize went to Pierre Bonnard of France, outstanding Impressionist, for his "Breakfast Table"; the third prize to Pedro de Valencia of Spain for "Spring." Five other prizes, awarded as usual, went to English, French, Italian and two other American painters. A special feature of the International was a one-man show of 17 paintings by Jose Gutierrez Solana, Spanish, the first one-man show since 1926. The high quality of all the work from Spain was generally remarked, and with surprise, in view of the turbulent state of that country.

OTHER EXHIBITIONS

Gillespie Galleries.—Simultaneously with the opening of the International, there opened at the Gillespie Galleries in Pittsburgh, a rival exhibition of paintings by Americans not represented in the Carnegie show. The Gillespie exhibition was regarded as a result of the rental fee demand, and subsequent boycott. However, the Gillespie Galleries paid no rental fee, as the policy exempts commercial galleries.

Art Institute of Chicago.—The rental policy was also injected into the 47th annual exhibition of American Painting and Sculpture at the Art Institute of Chicago. Because the policy was accepted by The Artists' Union of Chicago, which claims a membership of several hundred, it had the apparent effect of giving a chance to a large number of unknown young artists. However, another issue, the "Sanity in Art" movement launched a year earlier by Mrs. Frank G. Logan as a protest against the award of the substantial Logan prize and

Art Institute of Chicago medal to painters of the "modernist" school, probably had also some effect on this annual exhibition, in its more conservative character through choice of the jury of selection.

New York.—Mayor La Guardia's Municipal Art Committee opened exhibition galleries for contemporary art in January, 1936, at 62 West 53rd Street, the initial exhibition, Jan. 6 to 18, including 100 exhibits by 46 painters and sculptors. Thoroughly remodeled with WPA funds, the galleries offer free exhibition space for works by resident artists, who must be members of either formally organized or temporary groups. At first it was also ruled that exhibitors were also to be citizens of the United States, but this regulation drew fire from the artists, who pointed out that Japanese artists (among them a well-known painter) who cannot be naturalized, were debarred, though long residents of the metropolis. The ruling was changed to admit such artists, and the Mayor's Committee was equally vigilant to make just settlement of other heated controversies with the artists. During the first nine months of the year, the Temporary Galleries had shown the work of 48 groups, generally of 10 to 15 artists each, and had made sales to the extent of about \$3,000. Furthermore, by October 1, \$14,000,000 was reported pledged by private donors for New York City's projected Art Center, sponsored by Mayor La Guardia.

San Diego Exposition.—A superabundance of splendid exhibitions of paintings in addition to those already mentioned, also made the year memorable. Of primary importance were three great shows held in connection with expositions. San Diego, whose California Pacific International Exposition re-opened in Balboa Park February 12 to continue to autumn, presented in its Palace of Fine Arts, a completely new exhibition assembled by its director, Reginald Poland. The arts of Mexico, the Orient and contemporary America were featured. Whereas in 1935 the Gallery's permanent collections were the backbone of

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the show, emphasis in 1936 was upon loans from American museums, private collections, dealers and artists.

Texas.—A feature of the great Texas Centennial Exposition already mentioned, was the Centennial Art Exhibition, especially assembled for the celebration of a century of Texas history; it also opened the new Dallas Museum of Fine Arts, the most imposing of six buildings in the \$2,000,000 Civic Center. Dr. Robert B. Harshe and Daniel Catton Rich (of the Art Institute of Chicago, who brought together the great Century of Progress art exhibitions there) were assisted by Richard Foster Howard, new director of the Dallas Museum, in assembling paintings and sculpture illustrating the history of European art and emphasizing the development of American art, featuring the Southwest as a geographical unit, and Texas' "own artists"; one gallery was devoted to paintings and other works by Frederic Remington, great painter of the West.

AMERICAN ARTISTS' CONGRESS

The first American Artists' Congress was held Feb. 14-16 in New York City, sponsored by 400 artists who signed the Call to Congress, in their increasing efforts to solve economic and other contemporary problems affecting them, of which the rental issue was only one. The slogan of the Congress was "United to Defend Culture Against War and Fascism." Total membership at the time of the Congress represented 28 States, and all but 41 of the 400 members attended, with guest-delegates from Mexico (including Orozco, mural painter), Canada, Cuba and Peru. The Congress was made a permanent organization on a national scale, to be known as the League of American Artists.

At the Congress, George Biddle, president of the Society of Mural Painters offered a resolution that all artists should refuse to participate in the art exhibition to be held in connection with the Olympic Games at Berlin because of their Fascist sponsorship. However, there were a few United States entrants of works

of art in the Olympic exhibition: Gifford Beal, Reginald Marsh and Kenneth Hayes Miller were among the painters represented in a group of 25 paintings and prints, and there were also works by five sculptors.

Later in the year, more than 100 American painters and other artists contributed works to be exhibited and sold at the A.C.A. Gallery, New York, under auspices of the American Artists' Congress, and the proceeds were to go to the Spanish Government (People's Front).

The awakening political consciousness of artists was further manifested by the American Artists' Group, which sent an open letter in September to Governor Landon as the Republican nominee for President, expressing appreciation of the present Administration's efforts in behalf of the artists, requesting Landon's views concerning matters affecting them, and inquiring whether he, if elected, would continue some similarly beneficial program. The Governor replied promptly, expressing sympathy, but declining to set forth a specific plan.

Cleveland.—Upon the heels of the Texas Centennial, there opened a superb exhibition of paintings in Cleveland's Museum of Art, which was simultaneously the celebration of its 20th anniversary, and the official art exhibition of the Great Lakes Exposition, held June 26 to October 4, to mark the centennial of Cleveland's charter as a city. The exhibition adequately set forth the history of European and American painting and revealed the richness of American collections through many loans, supplemented by a series of superb paintings sent from Europe, and never before shown in the United States. From the Louvre came a Raphael and a Titian and from Italian private collections, through the efforts of Amadore Porcella, art critic of the *Osservatore Romano*, eight masterpieces of the Italian Renaissance schools.

MEMORIAL SHOWS

A second distinctive class of exhibitions comprised the memorial shows celebrating anniversaries of

American painters. The centennial of the birth of Winslow Homer, "most purely native American painter," was commemorated at the Pennsylvania Museum of Art, Philadelphia, at Prout's Neck, Maine (in Homer's old studio), at Knoedler's Gallery, New York City (aquarelles) and at the Whitney Museum of American Art, New York City, mid-December, 1936. The centennial of the birth of Homer Martin, one of the first important American landscapists, was commemorated by an exhibition at the Macbeth Galleries, New York City. The Metropolitan Museum of Art held during March and April a comprehensive centennial exhibition of the work of John La Farge (born 1835). The most complete exhibition of the paintings of Frank Duveneck held since his death in 1919 was a feature of the 50th anniversary of the dedication of the Cincinnati Art Museum; it included 105 paintings, both owned by the Museum and lent by others.

LOAN EXHIBITIONS

Richmond, Va.—A loan exhibition of 150 paintings illustrating the development of painting in America and a preliminary showing of the permanent collections opened the new Virginia Museum of Fine Arts in Richmond, in January, established largely through the gifts of the late Judge John Barton Payne.

Chicago.—The "Rembrandt and His Circle" exhibition at the Art Institute of Chicago (December, '35-January 19, '36) included Rembrandt's "Christ at Emmaus," from the Louvre, the most important painting yet sent overseas by the French Government, also a loan from the Rijksmuseum, Amsterdam.

Detroit.—Sixty paintings by Peter Paul Rubens, lent from American museums and collections, formed the 18th loan exhibition of old masters at the Detroit Institute of Arts in February and March. It was assembled by Dr. William Valentiner, who also wrote the scholarly catalogue.

Philadelphia.—A loan exhibition which was expected to be the greatest

review of German art to be seen in the United States, was depleted to the extent of 26 rare works, recalled by five German cities, which feared legal attachments of them by American holders of their defaulted bonds. Nevertheless, the show included 261 fine examples of German painting and drawing from the 15th through 19th centuries. Sponsored by the Oberlander Trust and the Carl Schurz Memorial Foundation, it opened at the Pennsylvania Museum of Art, Philadelphia, in October, and later started on a circuit of important museums.

New York.—Contemporary Norwegian paintings under direction of Johan H. Langaard, secretary of the National Gallery of Oslo, were exhibited at the Roerich Museum, New York City, through February. In October, 12 contemporary Hungarian painters were represented in an exhibition of 40 oils, temperas and pastels shown for the first time in the United States, which started on a tour of 40 American cities under patronage of John Pelenyi, ambassador from Hungary.

Boston.—An epochal exhibition of Japanese painting and sculpture representing years of preparation by Harvard University and the Boston Museum of Fine Arts, was shown at the Museum in September and October. It includes more than 100 distinguished loans from great public and private collections in Japan (including that of H. I. M. the Emperor) of a calibre shown in the Occident only twice before (Paris, 1900, London, 1910) and in conjunction with the Museum's own superb collections of Japanese art, constituted a comprehensive collection of examples of high quality, ranging in date from the 7th to the 19th centuries.

California.—Japanese painting was also well represented in an exhibition of the art of Japan held at Mills College, California, in the spring. It included 359 exhibits dating from 3000 B.C. to the close of the Tokugawa period (1867), all American owned save a few loans from the Louvre.

FRENCH ART IN AMERICA

The proportions of an epidemic were reached by the exhibitions of French painting. The great Van Gogh collection which toured the United States beginning in January, broke attendance records in a number of cities, climaxed by its month-long showing in San Francisco where 227,540 persons visited it, an average of 7,500 per day. The first comprehensive and retrospective exhibition of the work of Paul Gauguin to be seen in the United States, was held at the Wildenstein Galleries, New York, March 20 to April 18, for the benefit of the Société des Amis de Paul Gauguin of Paris, and the Penn Normal, Industrial and Agricultural School of St. Helena Island, S. C. About half of the 46 canvases were shown for the first time in this country, and included loans from the Louvre and private collections in Paris. At various dealers' galleries in New York, beginning in the fall, were seen the first (in America) one-man show of Géricault; Renoir; Picasso at 3 places, one of them New York University's Gallery of Living Art; Henri Matisse; Cezanne; Derain; Edy Legrand. In November, the Pennsylvania Museum, Philadelphia, opened the largest exhibition of work by Degas ever shown in this country: 100 oil paintings, pastels and other items, more than 20 of them loans from Europe. Toward the end of the year there was shown at the Knoedler Galleries, New York City, an exhibition of 24 paintings by the 17th century masters Georges de la Tour and the Brothers Le Nain, borrowed from French, German, Dutch, English and American museums and collections, for the benefit of the Society of Friends of the Museum of Blérancourt, Aisne, and the Lycée Français in New York. The exhibition was subsequently to visit the art museums of Chicago, Detroit, and St. Louis.

SHOWINGS OF ABSTRACT ART

Two important exhibitions of abstract art were shown: Non-Objective Painting at (of all places) Charleston, S. C. in March and April, at

the Gibbes Memorial Art Gallery, containing 128 paintings from Seurat to Rudolf Bauer; and simultaneously, Cubism and Abstract Art at the Museum of Modern Art, New York City, including nearly 400 paintings and other items, mostly by Europeans.

SALE OF THE CLARKE COLLECTION

Perhaps the outstanding sale of art during the year was that of the magnificent collection of 175 historical American portraits of statesmen, musicians, authors, inventors and other celebrities, collected by the late Thomas B. Clarke between 1872 and his death in 1931, the most important of its kind in existence, to M. Knoedler & Company of New York. The sum was not published, but suspected to be over \$1,250,000. The collection includes the famous "Vaughan Washington," Gilbert Stuart's first portrait from life of our first President, Savage's "Washington Family" and several other early Presidents. The entire collection was subsequently bought by Andrew W. Mellon of Pittsburgh and is comprised in Mr. Mellon's munificent gift of art to the nation to be incorporated in a national art gallery in Washington. (See "Mellon Gift of Art to the Nation," pp. 833-36.

NECROLOGY

Losses to American painting by death were considerable. Edwin Howland Blashfield, dean of American mural painters, died Oct. 12, aged 85. He bequeathed \$25,000 to the National Academy of Design, of which he was president for many years and one of only three persons ever to receive its gold medal. The famous artists' colony at Taos, New Mexico, lost three of its outstanding members: E. Irving Couse, a founder of the colony (April 25); W. Herbert Dunton (March 18) and Walter Ufer (Aug. 2) all of whom were genre painters of Indian and other southwestern themes. Other deaths included Arthur William Woelfle, portrait and landscape painter (March 6); Carl von Marr, Milwaukee-born German painter,

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elevated to the nobility in Germany (July 10); Abbott F. Graves, flower painter (July 16); George Pearce Ennis, water colorist (Aug. 28); Walter L. Clark, portrait painter and director of the Grand Central Art Galleries, New York City (Dec. 18,

1935); John McLure Hamilton, portrait painter with portraits of many international celebrities to his credit (Sept. 10); Wilson H. Irvine, landscape painter (Aug. 21); and Pierre Troubetzkoy, portrait painter and husband of Amelie Rives, novelist.

SCULPTURE

BY ROSE V. S. BERRY

ART CRITIC AND WRITER

FEDERAL GOVERNMENT PROJECTS

Much that has resulted from the art projects first put forth by the Government in 1935 will remain to bear witness that opportunity inspires effort. Much of this effort, no doubt, will pass into a sculpture discard amazing to the critics and friends of the art. Radical forces pitted against academic standards were loud in protest. Liberal groups will, from a neutral point of view, rescue that which deserves to be spared. Many commissions are in the process of completion. Several projects completed will change the whole story of American sculpture.

The new Federal Post Office Building in Washington D. C. is one of the important undertakings for the sculptors. Forty-seven sculptors submitted 62 models to the sculptors—Walter Hancock, C. P. Jennewein, and Arthur Lee. Among the successful competitors were Stirling Calder, Chaim Gross, Arthur Lee, Oronzio Maldarelli, Attilio Piccirilli, and Carl L. Schmitz. Among the statue-subjects accepted were "The Expressman" by Heinz Warneke, "Stage Driver" by Sidney Waugh, "Railway Mail" by Concetta Scarsavaglione, "Postman" by Berta Margoules, and "Rural Free Delivery" by Gaetano Cecere.

EXHIBITIONS

Salons of America.—In the 14th Annual Exhibition of the Salons of America the work of the following sculptors was outstanding: Chaim Gross, Dorothea Greenbaum, David Michnich, Doris Cesar, Arline Win-

gate, Ruth N. Graecen, Adam Sanders, Anita Wischler, Rhys Caparn.

Municipal Gallery.—The new Municipal Gallery's first sculpture exhibition included excellent examples of Ahron Ben-Shumel, Jack Daniels, Mrs. Peter Greene, Ernest Gutman, Helen Straube, Maurice Glickman, Louis Wilkes, Marcello Di Santis, I. Katz, John Horowitz, Albino Cavillito, Lucy Christopher, Chaim Gross, Ethel Myers, Pauline Margulies, Joseph Nicolosi, Warren Wheelock, Polygnotis Vagis, Alexander Zeitlin, Anita Wischler, and many others.

The Modern Museum gave an interesting exhibit of statuettes by Alexander Archipenko, Stirling Calder, and several other Americans. Among the foreigners exhibiting were Arp, Belling, Boccioni, Brancusi, and Lipschitz.

Whitney Museum.—The Sculpture Biennial Exhibition held at the Whitney Museum included the work of 65 sculptors, among them being Arthur Lee, Vincent Glinsky, Walter Hancock, Paul Fiene, Lincoln Rothschild, Joseph Nicolosi, Henry Schongauer, Hugo Robus, J. Wallace Kelly, Richmond Barthé, Reuben Nakian, Malvina Hoffman, Hunt Diederich, Josephine Levy, Thomas Penning, Alonzo Houser, Oronzio Maldarelli, Chaim Gross, Albino Cavallito, Helene Sardeau, Charles Rudy, Heinz Warneke, José A. Ruiz, Wharton Esherich, Ibram Lassaw, and Marion Walton. Among the purchases for the permanent collection of the Whitney Museum were sculptures by Gwen Lux, Waylande Gregory, the late Gaston Lachaise,

SCULPTURE

Nat Werner, S. F. Bilotti, Robert Laurent, Simon Moselsio, Minna R. Harkvey, and Concetta Scaravaglione.

The Dallas Exposition assembled in its Art Department an excellent collection of American sculpture covering a retrospective group as well as living artists. The catalogue included the names of Jo Davidson, Edward McCartan, the late Gaston Lachaise, Allen Clark, Charles Cary Rumsey, Paul C. Jennewein, Maurice Sterne, Brenda Putnam, Gertrude Vanderbilt Whitney, Chester Beach, Albert Stewart, George Grey Barnard, Vincent Olinsky, Harold Cash, Oronzio Maldarelli, Wheeler Williams, José de Creeft, Silvia Shaw Judson, Lucy Perkins Ripley, Cecil Howard, Elie Nadelman and Albert Laessle.

The Ferargil Gallery gave an unusual exhibition of models in impermanent media. Among the 25 sculptors who contributed were William Zorach, Frederick MacMonnies, Mario Korbel, Harriet Frishmuth, Joseph de Creeft, Paul Jennewein, Wheeler Williams, Hunt Diederich, and John Angel.

San Diego Exposition.—The San Diego Exposition's 1936 sculpture exhibit continued to attract favorable comment in which the work of Arthur Lee, Hunt Diederich, the late Gaston Lachaise, Herbert Hazleton, and Mahonri Young, was outstanding.

American Sculptors at Berlin.—The work of five American sculptors was included in the art section of the Olympic Celebration in Berlin. The sculptors were Joseph Brown, Bruce Douglas, Cecil Howard, Raoul Josset, and George Kratina.

Clay Club of Philadelphia.—The exhibition of the Clay Club of Philadelphia included the work of 34 sculptors. The collection was interesting because of the number of media presented by the artists. George Cerny showed two studies in lime stone and one in ebony; Frank Elisen showed several in wax; Sahl Swarz had two decorative figures in bronze; Mimi Murphy and Margaret Sherwin showed several studies in hard wood. Among others receiving

favorable comment were James Savage and Harriet Donnelly.

Bird Studies in New York.—An exhibition of unexpected interest in New York was that of several sculptors who combined their studies of birds. There were birds in bronze, granite, marble, cast-iron, alabaster, applewood, concrete, and copper. Some of the contributing sculptors were William Zorach, Reuben Nakian, Robert Laurent, Horace Piccirilli and Heinz Warneke.

The Society of Medalists invited five sculptors—George Lober, Stanley Martinsan, Bruce Moore, Sydney Waugh, and Albert Stewart—to submit designs for the issue of their fourteenth medal. Since the founding of the Society medals have been designed by Laura Gardin Fraser, Paul Manship, Hermon McNeil, Frederick MacMonnies, Lee Lawrie, John Flannagan, C. Paul Jennewein, Gaetano Cecere, Herbert Adams, Albert Laessle, Lorado Taft, Anthony di Francisci, and R. Tait McKenzie.

PRIZES AND AWARDS

The Society of Washington Artists awarded their first prize to Anita Wischler for her portrait study of James Houston Spencer. Their second prize was given to Florence Foss for a group "Playing Cats."

The Artists of Pittsburgh awarded the first sculpture prize to Janet De Coux; the second, to Charles Bradley Warren.

The Women's Painters and Sculptors awards were given: The first, to Grace Mott Johnson; the second, to Cornelia Van Chapin; the third, to Mabel Kent Hoe. Honorable Mention was given Frances Mallory Morgan. The critics gave high praise to "Moyen Age" the work of the Society's president Jessie Stagg.

The National Academy of Design had for its Sculptors Jury, Herbert Adams, A. Stirling Calder, Ulric H. Ellerhusen, Charles Keck, and Edward McCartan. The first prize was awarded to Walter Rotan and the second prize to Gertrude K. Lathrope.

The gold medal was given to Hilda K. Lascari.

The Pennsylvania Academy of Fine Arts included 96 pieces of sculpture. The Jury consisted of Walter Hancock, Paul Jennewein, and Arthur Lee. The Widener sculpture prize went to Vincent Glinsky.

Detroit.—Detroit's Twenty-Fifth Annual sculpture awards included a first cash prize to Harry Bethke; a second cash prize to Jim Lee; and the Scarab Club's gold medal was presented to Jay Boorsma.

San Francisco.—The San Francisco Art Association's first award, a purchase prize, was won by Helen Phillips, of Fresno, Calif.

One-Man Exhibitions during 1936 were of unusual interest and importance. C. Paul Jennewein showed 25 architectural pieces that have constituted some of his commissions. Gertrude Vanderbilt Whitney's first exhibition in 12 years included many studies from her monuments and memorials which have taken the most of her time in recent years. Anna Hyatt Huntington's exhibition at the American Academy of Arts and Letters included 70 examples, some of them very definitely among the best she has ever done. Cecil Howard's miniature sculpture was unique and revealing. These small models were modeled in beeswax and then cast in bronze. The subjects included boxing, wrestling, ice-hockey, skating, archery, fencing and diving, frequently calling violent extremes in pose and balance. In miniature, however, the bronzes were fascinating without wearying the observer. The exhibition honoring the late Gaston Lachaise included the model for his Samuels Memorial which he had just completed for the Fairmount Park Art Association, Philadelphia. The sculptor portrayed all the races that have commingled in making the American people. Chaim Gross with a selection of hardwood studies, and Ahron Ben-Shumel with several subjects in Quincy granite, shared an exhibition. Herbert Hazelton's bronze portraits of racing horses and thor-

oughbreds included a likeness of Man O' War, who won 20 out of 21 races. Altamas Katchmakoff and Warren Cheney, two California sculptors gave their first one-man shows in New York. Other one-man exhibitors during the season include: Anna Glenny, Adam Sanders, R. Tait McKenzie, José de Creeft, Anna Coleman Ladd, and Boris Lovet-Lorski.

COMMISSIONS AND PLACEMENTS

William Zorach's massive "Mother-and-Child" group has been lent indefinitely to Columbia University, and installed in the Avery Library. Zorach has completed his "Texas Pioneer Mother," a pre-Phidian nude of heroic size.

Bufano's statue of Saint Francis, 180 feet high, intended for Twin Peaks, the highest point of San Francisco's famous sky-line boulevard, may be rejected by the Park Commissioners.

In a competitive venture in 1884, Cyrus Dallin's equestrian statue of Paul Revere was accepted by the City of Boston to place before its State House. In March, 1936, the sculptor appeared before the Massachusetts Legislature to ask for a sufficient sum of money to carry out the original but long delayed plan.

OUTDOOR SCULPTURE EXHIBITS

The year 1936 has seen the achievement of a purely American effort—a permanent out-door exhibition of sculpture. It was the late John E. D. Trask who first installed an out-of-door collection of sculpture in the gardens of the Fine Arts Palace in San Francisco's Panama Pacific Exhibition. The late Cornelia Sage Quenton, took the entire San Francisco exhibit to Buffalo, and with additions it became the largest sculpture show America had seen. Later, several new museums included sculpture courts and terraced gardens in their building plans, to aid in sculpture display. The Rittenhouse Square exhibit became a regular Philadelphia project. Cleveland, Brooklyn and San

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Diego included out-door exhibits in their regular seasons. In Illinois, the late Lorado Taft, his pupils and friends, were installing something beautiful where it was most needed somewhere in their State each summer. The idea of out-door exhibits grow. The National Sculpture Society installed a large exhibition in New York City, which lasted one summer and fall. The Hispanic Museum Court was utilized, and the Hudson River embankment was terraced for the sculptured figures and groups. Then came San Francisco's great sculpture exhibition in 1929, financed and sponsored by Archer M. Huntington, secured for the coast by Mrs. Cornelia Sage Quenton. On its site by the Golden Gate, the monumental, civic, and memorial figures were shown to great advantage. And the most skeptical museum visitor was convinced that sculpture needed the out-door setting.

ARCHER M. HUNTINGTON PROJECT

In 1936, after a six-year effort, Archer M. Huntington and his sculptor-wife, Anna Hyatt Huntington, realized a dream project. They have assembled a collection—a current history—of American sculptors, including examples of: Herbert Adams, Robert A. Aitken, Edmond Amateis, George Grey Barnard, Chester Beach, Percy Bryant Baker, George Winslow Blodgett, Abram Belskie, Marion Branning, Solon H. Borglum, Edith W. Burroughs, Alexander Stirling Calder, Gaetano Cecere, Allen Clark, Joseph A. Coletti, Cyrus Edwin Dalin, Jo Davidson, Gleb Derujinsky, Hunt Diederich, Abastenia Eberle, Rudolph Evans, Daniel Chester French, James E. Fraser, Laura Gardin Fraser, Harriet W. Frishmith, Beatrice Fenton, Avard Fairbanks, Sherry Fry, Paul Fjelde, Victor Frisch, Dorothea Greenbaum, Frances Grimes, John Gregory, Henry Hering, Eli Harvey, Ernest Bruce Haswell, Joan Hartley, Ralph Hamilton Humes, Walter Hancock, Helen Hournay, Milton Horn, Benjamin Hawkins, Grace Mott Johnson, Carl Paul

Jennewein, Louis Paul Jonas, Ralph Jester, Silvia Shaw Judson, Charles Keck, Mario J. Korbel, Ernest Wise Keyser, Benjamin T. Kurtz, Joseph Kiselewski, Isidore Konti, Anna Coleman Ladd, Albert Laessle, Katherine Lathrop, Katherine Ward Lane, Leo Lentelli, George J. Lober, Arthur E. Larengani, Paul Manship, Frederick MacMonnies, Hermon MacNeil, Harriet R. H. Mayor, Robert Tait McKenzie, Edward McCartan, Bruce Moore, Oronzio Maldarelli, Pietro Montano, Charles H. Niehaus, Berthold Nebel, Joseph Nicolosi, Constance Ortmayer, A. Phimister Proctor, Albin Polasek, Edith Barretto Parsons, Brenda Putnam, Furio Piccirilli, Attilio Piccirilli, Richard Reachia, Walter Rotan, Charles Rudy, Charles Cary Rumsey, Frederick Roth, Edward S. Sanford, Janet Scudder, George Snowden, Albert Stewart, Eugenie Shonnard, Eugene Schoonmaker, Sahl Swarz, Augustus Saint-Gaudens, Laurence Tenney Stevens, Grace Talbot, Paul Troubetzkoy, Katherine Van Courtland, Bessie Potter Vonnoh, Heinz Warneke, Sydney Waugh, Mrs. Harry Payne Whitney, Wheeler Williams, Adolph A. Weinman, Alice Morgan Wright, Julie Yates, and Mahonri Young.

Near Georgetown, in South Carolina, the Huntingtons have combined with their estate, Brookgreen, three others—The Oaks, Springfield, and Laurel Hill. These have been landscaped into a unit by winding paths, pools, fountains, and shaded nooks. Roofless structures of cement-sprayed brick supply niches and bracketing space for small sculptures. The whole serves for the superb setting of the present collection of sculpture which, with an endowment fund of \$1,200,000 for upkeep and additions to the collection, has been given to the State of South Carolina. The Huntingtons have thus made permanent this American idea of an out-door sculpture exhibit in a southern State where climate, setting, and seasonal changes cannot injure the collection which in all the years to come will put the American sculptor before the American people.

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ARCHITECTURE
By LOUIS LABEAUME

FIRST VICE PRESIDENT, THE AMERICAN INSTITUTE OF ARCHITECTS

GENERAL

In any attempt to summarize the progress of an art, a profession or an industry during a given period, many factors must be taken into account. Moreover, there are many elements involved in the use of the word progress. Some of these are material, some technical, some social, some moral, some aesthetic. In the field of Architecture all these must be considered. It is well known that the depression has greatly curtailed building activity during the past five or six years, and that only now are we beginning to hail faint signs of its revival.

GOVERNMENTAL STIMULATION

Throughout 1936 the Federal Government continued to stimulate construction activity by means of grants and loans to State and municipalities contemplating public works. Many cities and States have been encouraged to undertake building programs on a fairly extensive scale. While the total volume of public work in normal years is only a small proportion of the total of all building activity, this proportion has recently been greatly increased. Many types of public buildings have been designed and erected in all parts of the country, and many more are under way. These include court houses, post offices, memorials, hospitals, eleemosynary institutions, schools, etc. This activity has been heartening to architects, draftsmen, engineers, contractors and the manufacturers of building materials. Some of this work has been assigned to architects in private practice, though much of it has been carried on by greatly enlarged Federal, State and municipal bureaus.

The Architectural profession continues to question the wisdom or economy of bureaucratic design, and clings strongly to the belief that the full development of Architecture as

an art can best be served by the encouragement of individuality rather than by submerging it into a more or less lifeless and perfunctory organization. At the same time, however, the profession is becoming daily more keenly conscious of its obligations to society, and is cooperating as best it can toward the solution of the problems posed by changing conditions.

HOUSING

The subject of mass housing still engages the attention of the country; but due to many factors, economic, legal and social, progress has been pitifully slow. The need and desirability of more wholesome and comfortable living conditions for great sections of our population is almost universally recognized, but as yet no satisfactory formula has been devised to abolish our slums and make over our blighted areas. Students of social conditions, city planners and architects, as well as the Federal Government, have cooperated in the formulation of studies and plans, only to be thwarted by obstacles apparently inherent in our economic system. The high cost of land and the high cost of labor and building materials are but two of the many factors which are causing a postponement of the realization of our ideals.

While the Government's efforts in the field of mass housing were frustrated by adverse court decisions, and other discouraging obstacles, the Federal Housing Administration, through its policy of guaranteeing building loans, has contributed in no small measure to the increase in building activity during 1936. Many individual homes and business structures, as well as a few larger projects, have been financed through the encouragement given by this agency.

The Federal Housing Administration has been instrumental also in

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stimulating activity in the field of repair, remodelling and modernization, and many more or less obsolescent and decaying properties have been redeemed and made useful, profitable and attractive. Though the units affected are generally small, the field itself is large. The problem has challenged the skill of the architect and the effort has contributed to the well being of labor and to the prosperity of the manufacturer of building products.

PRIVATE BUILDING

The year was not notable for any extensive revival in the field of private building or building for investment. The development of Rockefeller Center continues, but elsewhere few additions to the urban supply of office buildings and apartments have been made. Nor has industry felt itself in a position to undertake plant development and extensions on a large scale. Early revival in this field, however, may be looked forward to with some confidence.

CITY PLANNING

Aside from questions of finance and the wise planning of individual units, the problem of better housing for large groups is inexorably bound up with the problem of urban development, sanitation, recreation and transportation. It is encouraging, therefore, to note that the whole subject is now being studied in its broader aspects by the more alert members of the architectural profession and the leading schools of architecture, as well as by other groups. And as economic recovery proceeds, it is reasonable to expect that the subject of city planning may receive more than lip service in many communities throughout the country.

THE SMALL HOUSE

The subject of the small detached house received much study during the year. Associations of able architects were formed in many centers to prepare typical plans to meet varying family demands. Serious efforts are being made to improve

the efficiency, structural quality and appearance of the small house and to render this needed architectural service to prospective owners at costs in conformity with their building budgets. A considerable measure of standardization and repetition of types and details would seem to be necessary in order to insure the success of the effort.

At the same time, the idea of machine-made houses widely distributed at lower prices based on quantity production, is being intensively studied by manufacturers. Thus far the experiments in this field seem tentative. Whether or not the public will respond in great enough degree to the appeal of the factory-made house produced by the methods which have proven so successful in the automobile industry remains to be demonstrated. Quite possibly we may look forward to greater and greater standardization of parts, simplified methods of construction and the use of novel products of the laboratory as their desirability and economy are realized.

MATERIALS

The architect's material vocabulary is constantly expanding. The keenness of industrial competition and the search for new markets continues to call newer products to the attention of the public. The range of these is wide, extending from the foundation to the roof. Some are purely structural, some appeal chiefly to the eyes; and many to modern ideals of comfort, convenience, speed, economy and hygiene. Gypsum, asbestos, rubber, glass, fibers, metal, alloys, natural substances of all sorts are being moulded and wrought into plausible building material. As these products come into greater currency and each maintains its own inherent character, not attempting to imitate something which it is not, our architecture will inevitably take on a different aspect.

MODERNISM

Indeed the effect of the wider use of these newer materials is already

apparent. Modern experiment in design proceeds hand in hand with the development of modern materials. The loose term modernism connotes different things to different minds, but perhaps it may fairly be defined to mean in its most universally accepted sense a tendency toward simplification, utilitarian efficiency, smoothness, and the smartness which is expected to result from the elimination of all ornament and details not inevitably dictated by necessity. Some of the results thus far attained are stylish, but it is yet too early to affirm that they have definitely established a style.

Developments in industrial design have been interesting and quickening to the imagination; and the effect of the whole movement on the art of architecture will undoubtedly be wholesome, in the long run.

DESIGN

This is another loose term. Basically it may be said to mean an orderly, harmonious, logical, and thus inevitable combination of elements into a completely satisfactory mass or pattern. It is equally applicable to architecture, painting, sculpture, music, poetry, weaving, dancing or any other creative art.

Throughout the architectural profession the fundamental matter of design has been warmly debated during the year. But it is obvious that design is not a matter for debate, but, on the contrary, a matter for practice and performance. Critical analysis is, however, profitable, and the self-searching of the profession may prove to be one of the valuable by-products of the depression.

It cannot be denied that the technological advances which have been made in science, together with the social changes which are in ferment must sooner or later be reflected in our architecture.

It is trite to say that new problems call for new solutions. Men have recognized this truth in the past, and however reluctantly they may do so, are recognizing it to-day. The Architectural profession as a

whole is bending its best efforts to meet its new and changing responsibilities. The individual architect realizes to-day, as perhaps never before, that in the art of building many forces must be brought into harmonious cooperation.

EDUCATION

Preparation for the practice of architecture must be based on a clear conception of the purposes of architecture, and vitalized by a definite and well-rounded course of instruction. Many of our universities and colleges maintain long-established schools of architecture. As the profession is aroused to its new responsibilities, so are the schools of architecture. Everywhere our architectural leaders are scrutinizing their curricula and modifying it to better serve its intended purpose. The school approach to the problem of design is rapidly changing. And while the basic principles of design may be discerned in the valuable achievements of the past, the application of these principles to the needs of the present constitutes a challenge which the schools seem ready to accept.

PUBLIC INTEREST

Each year marks an increasing interest on the part of the public, in the architectural development of the country. By its very nature architecture impinges on the consciousness of every one. Not only does the public crave beauty, exterior as well as interior, in its buildings, but demands the elements of comfort, convenience and durability in greater and greater degree. To measure an increase in all these qualities from year to year is difficult. But it may be safely said that with a deepening understanding on the part of the public of the sound characteristics of good architecture, each year marks an advance over the year preceding. Every architect wears his heart upon his sleeve, so to speak, and every work of architecture is submitted each year to more searching analysis and criticism.

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THE PRESS

As America advances toward national maturity, so we find the public press devoting more and more space to matters of architectural interest. No longer is the mere height, length or bulk of a building the criterion by which its importance may be measured; but we are now witnessing serious attempts to evaluate architecture esthetically and from the social point of view. There are signs that this increasing interest and sophistication on the part of the public will, in time, develop a competent school of criticism such as already exists in some degree in the arts of music, painting and the drama. The public press will respond to this need as it makes itself felt. The professional journals are already aware of the value of critical analysis, and are making strenuous efforts to prepare the profession for the new conditions which confront it. Many of them are filled with technical and mechanical data valuable as bearing on the architect's problem, but still too few seem concerned with the deeper importance of philosophic and esthetic interpretation.

THE WILLIAMSBURG RESTORATION

The practical completion of this interesting enterprise sponsored by the enthusiasm and generosity of John D. Rockefeller, Jr., may be chronicled as perhaps the most conspicuous contribution to our archi-

tectural patrimony for some years. Research, scholarship and skill have united to recreate at Williamsburg a charming example of eighteenth century American architecture. Williamsburg will become a Mecca for all people interested in our early culture and history. It constitutes, in itself, a museum and a memento of priceless value, though the times which originally called it into being cannot be recalled. It will be appreciated all the more as it is realized that we are confronted by changed conditions and challenged by new problems.

EXPOSITIONS

The Texas Centennial Exposition at Dallas provided another opportunity for Architectural Experimentation. This has come to be recognized as one of the uses of such an enterprise. Its transitory nature permits, or rather encourages essays in new forms, masses and composition. Some residue of value may remain after the stucco has been repulverized and the skeletons carted away.

The past year also marks the inception of a similar enterprise on a grander scale. Architects are now busy preparing plans for a World's Fair to be held in New York in 1939. Thus another opportunity will be afforded not only to sum up the developments in design which have been tentatively attempted, but to forecast the architecture of tomorrow.

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By CATHERINE SMITH BAILEY

MUSIC REVIEWER, *The Christian Science Monitor*

FEDERAL MUSIC PROJECT

Probably the most significant event in music since the introduction of radio broadcasting was the accomplishment of the Federal Music Project during 1936. It is now well under way, with the ambitious but sane program launched by Nikolai Sokoloff with such success. The far reaching work has spread quietly all

over the country, being concentrated in the larger cities where the need and the opportunities were greatest. The thousands of concerts sponsored by the project are significant, but of far greater importance is the work of training and maintaining the orchestras and other musical groups involved. The educational centers teach every branch of musical learn-

ing. The orchestras have opportunity for regular and intensive rehearsal of works of standard repertory and an opportunity as well as performance when proper standards of achievement have been reached. Here indeed is a social phenomenon of the utmost significance, the sponsoring of good music by the government and the encouragement thereby of the development of real musicianship among instrumentalists, vocalists and teachers. Choral and instrumental groups are maintained for children as well as for adults. Sight singing, ear training, theory, score reading, program making and music appreciation are but a few of the many subjects taught in the various branches of the project. Of social as well as musical significance, the Federal Music Project will bear watching.

AMERICAN GUILD OF MUSICAL ARTISTS

The problems evoked by the early appearance of radio have by no means been solved. Musicians of the first rank, in spite of the increased number of paid performances available through the large broadcasting studios, have become more and more aware of the need for concerted action on their part in meeting new situations. In April, a group of performers incorporated the American Guild of Musical Artists. This is no watertight trade union of second rate performers. Lawrence Tibbett is the president and Jascha Heifetz, Alma Gluck, Deems Taylor and Richard Bonelli are the vice presidents. Other members are Richard Crooks, Mischa Elman, George Gershwin, Lily Pons, Rosa Ponselle, Albert Spalding, James Melton, Gladys Swarthout, Efrem Zimbalist, Frank La Forge, Artur Bodanzky, Lucrezia Bori, Frank Chapman, Florence Easton, Rudolph Ganz, Eva Gautier, Charles Hackett, Richard Hagemann, Howard Hanson, David Mannes, Lauritz Melchior, Lee Pattison, Artur Rodzinski, Ernest Schelling, Alexander Smallens, Nikolai Sokoloff, Chalmers Clifton, and many others. So far the Guild has shown

constructive and broad principles in its actions. It secured a more lenient attitude toward visiting foreign musicians, whose numbers the Dickstein bill had sought to limit to exactly the number of American artists allowed to make professional appearances in other countries. Many practical problems face the Guild. The disturbance of existing musical conditions by free radio concerts is no small threat. Sponsored by large radio advertisers, these concerts often employ the finest available orchestras and artists, and reach not only the audiences in individual homes but also enormous audiences which may come to the performance itself simply by securing free tickets. Even the artists who are paid to appear in these programs have come to feel that the eventual result of this practise may well be detrimental to music and musicians. Audiences who formerly supported regular orchestras and regular concerts are by this means weaned away from established concert series.

METROPOLITAN OPERA

A financially successful season in the city itself, and financially successful tours in the 1935-36 season encouraged the new management at the Metropolitan Opera House to plan for more novelties in the 1936-37 season and for more extended trips out of town. Wagner proved the most popular composer on the repertory, nine of his operas being given 38 times, about equalling the number of times that works of Puccini and Verdi were performed. Listed for the 1936-37 season were revivals of "The Flying Dutchman," "Norma," "Don Giovanni," "Bartered Bride" in English, Cimarosa's "Matrimonio segreto" also in English, "Samson and Delilah," and "Coq d'Or," this last with Lily Pons. Richard Hagemann's "Caponsacchi" is the opera by an American which the management had promised its subscribers.

Except for the Bori farewell on March 29, a huge affair which is described below, perhaps the most anticipated single performance of the

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season came when Edward Johnson, who had for an entire year immersed himself in the job of general manager of the Metropolitan, made a single appearance as a singer in the part of Pelleas in Debussy's opera, a part which he had made very much his own in his years as a singer with the New York company. The performance took place on March 18, and Bori sang the *Mélisande* during the last week of the regular season. At the close of that season came criticisms of the season as a whole, criticism of casts which had occasionally included inept and inexperienced new singers, an orchestra unimproved and badly in need of repair, an insufficiency of able conductors. There came also from the newspapers of the city a recognition of the calm, sane tact of the new general manager, and of his aptness in many directions.

Stella Andrevá, coloratura soprano, was added to the list of singers at the Metropolitan. Other coloraturas engaged were Bidu Sayao and Vina Bovy. Marjorie Lawrence, the new Wagnerian soprano, managed to get a good deal of publicity with her daring horsemanship on the stage, to the delight of the reading public and the discomfort of other prima donnas.

Lucrezia Bori, of her own volition, retired at the end of the 1935-1936 season after 25 years at the Metropolitan at what seemed to many commentators the height of her musical powers. Her tremendous popularity was evidenced by the great acclaim accorded her when she made her last appearances. The entire opera personnel joined in a farewell performance with the retiring soprano which took the form of a Sunday evening concert when Bori herself sang in Act II of "*Traviata*" and in Act III of "*Manon*." Martini, Tibbett, Pinza, Rethberg, Flagstad, Melchior, Ponselle, Martinelli and Crooks were among those who sang at the same concert on March 29, truly a "galaxy of stars."

The Metropolitan Opera House's Spring season began on May 11 and continued into June, with five per-

formances a week at popular prices which ranged from 25 cents in the family circle to \$3 in the orchestra. The spring season was the result of the plan agreed on by the Metropolitan directors and the Juilliard Musical Foundation in 1935 when the Foundation came to the assistance of the Metropolitan. It was designed to give younger American artists an opportunity to sing important rôles and to permit the public to hear operatic favorites at popular rates. Mr. Johnson labelled it an experiment in audience psychology. The results were very successful. Smetana's "*Bartered Bride*," done in an English version, was hailed delightedly, and Muriel Dickson and a few others of the spring group were retained for the regular company of the ensuing winter. The opera, too, was assigned to the regular repertory. Miss Dickson is not new to the singing stage. She came to this country with the D'Oyly Carte Gilbert and Sullivan company. "*Aida*," "*Traviata*," "*Butterfly*," "*Carmen*," "*Rigoletto*" and other standard repertory were all produced in English to the delight of large audiences. Gluck's "*Orfeo*," however, revived with the ballet, was not mounted in a way calculated to be a success. Otherwise, the presentations were greeted with much praise and enthusiasm.

OTHER OPERA

Stravinsky and Glinka.—Stravinsky's "*Persephone*" in its first New York appearance was performed by the Schola Cantorum on Feb. 4. The same program also included what to all purposes was a first New York performance of Glinka's "*Life for the Tsar*," the opera which founded the Russian nationalist school of composition.

Rimsky-Korsakoff.—The Art of Musical Russia, Alexander Smallens, conductor, and the Philadelphia Orchestra gave the first American performance of Rimsky-Korsakoff's "*The Tale of the Lost City of Kitezh*," mounted as a music drama, on Feb. 4 in Philadelphia. On March 3 the performance was repeated in New

York. Eugene Fuerst was in charge of the stage direction; the designs were those of Eugene Dunkel. At the Ann Arbor Festival in 1932, the music had been heard in concert form in its American première.

Juilliard School Program.—Ravel's "L'Heure Espagnole," that deliciously witty and piquant bit of modern opéra-comique, had a vivid and spirited performance by students of the Juilliard School of Music during the week of March 8. An English version of the text by Robert Simon brought the humor and the saltiness of the performance within the quick grasp of the audience. On the same bill was Werner Josten's pantomime ballet, "Joseph and his Brethren," a work of which some reviewers at this first performance found the ballet action not altogether homogeneous. The music itself seemed well written and possessed of good "theatre," characterization and feeling.

San Carlo Company.—"You can't," as *The New York Times* said, "keep the San Carlo Opera Company out of the news." In May the company completed a tour of 20,000 miles, covered during the preceding eight months. An open air season at the University of Rochester and a season at Jones Beach were events of the summer.

Detroit Civic Opera.—Ludovico Rocca's "The Dybbuk," one of the most successful of the new operas, was given its American première in Detroit on May 6, and was subsequently staged in Chicago May 7 and 9, and in New York on May 14, 15, and 16. The Detroit Civic Opera Company sponsored the performances. Franco Ghione, who had conducted at the first hearing of the work at La Scala in Milan, came to this country for these performances. The Detroit Symphony Orchestra and the Art of Musical Russia shared in the performances, and the leading rôles were interpreted by Rosa Raisa and Frederick Jagel.

The San Francisco Opera Association, with a season of 14 performances from Oct. 30 to Nov. 22,

imported only the stars for the performances and had a chorus which was developed in the city. In order to have full rehearsals, members of the chorus, which numbered 45, were trained also in the leading parts, and the frantic hurry of last-minute rehearsals was thereby avoided. The opera season drew a large response from the public. Gaetano Merola was the general director of the group. Reiner and Papi did the bulk of the conducting. The lists of soloists included Flagstad, Lehmann, Melchior, Schorr, Tibbett and others of similar experience and background.

ORCHESTRAS

Philharmonic.—John Barbirolli, the young English conductor chosen to open the 1936-37 season of the Philharmonic-Symphony in New York City came in November without fanfare or touting to open his season. With a background of considerable experience in his native land, he brought a modesty and a seriousness of approach which augured well for his future in New York, an impression borne out by his first concerts. In November Gaspa Cassado, cellist, made his American debut with the Philharmonic-Symphony. Hans Lange put on in November a second season of Philharmonic-Symphony Chamber Orchestra concerts for the benefit of the scholarship fund of Bennington College. The historical series went through the works of Dittersdorf, Gibbon and Gabrielli, the Bach family, Mozart, Beethoven, Haydn, Handel and Schubert, Milhaud, Hindemith, Holst, Honegger, Busoni and Casella.

Cleveland.—After Barbirolli's ten weeks, Rodzinski of the Cleveland Orchestra was scheduled to have eight weeks with the orchestra, then six weeks to guests, Stravinski, Enesco and Chavez, an arrangement of rotating conductors which left the orchestra in its old straits, without a single, responsible conductor. The Cleveland Symphony Orchestra, Artur Rodzinski, conductor, wound up a successful season of regular concerts with three performances of

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Wagner's "Parsifal" done with a cast of artists from the Metropolitan Opera Company.

Chicago.—The Chicago Symphony Orchestra, the only orchestra in America to achieve financial as well as musical success, with Frederick Stock now in his thirty-second year as conductor, summoned Hans Lange, formerly associate conductor of the Philharmonic-Symphony in New York, as assistant conductor of the Chicago Symphony and as conductor of the Chicago Civic Orchestra, that remarkable training ground for young musicians which is the "feeder" for the Chicago Symphony and for other symphony orchestras in neighboring states. In October, the Chicago City Opera Company also launched an ambitious operatic program.

The Boston Symphony Orchestra, Serge Koussevitzky, conductor, proceeded through another thoroughly successful season, and added to the large number of concerts in the regular Boston series and to its out of town trips a new venture, the Berkshire Festival (discussed under Festivals) and a group of extra concerts performed at the Harvard Tercentenary. Dimitri Mitropoulos and Richard Burgin were heard as conductors during the brief absences of Koussevitzky from the podium.

The St. Louis Symphony, Vladimir Golschmann, conductor, made three tours during the season, appearing in Ohio, Michigan, Illinois, Iowa, Missouri, Tennessee, Alabama, Louisiana, Texas and Oklahoma.

Philadelphia.—Leopold Stokowski and Eugene Ormandy, released by the directors of the Minneapolis Symphony, shared the Philadelphia orchestra's thirty-seventh season, 1936-37, with Ormandy leading the largest number of the performances, because of Stokowski's continued ill health. Only one guest conductor was engaged for the season, he being Paul Whiteman who had been heard as conductor of the players in the summer series of concerts in Robin Hood Dell. One of the features listed for the season, 1936-1937, was a series of Beethoven programs under Ormandy's leadership. Guest conduc-

tors from January through April, 1936, were Beecham, Molinari, Reiner, Janssen and Iturbi. The Orchestra presented first American performances of the Overture to Strauss's opera "The Silent Woman," libretto by Stefan Zweig, and Bela Bartok's "Hungarian Sketches," piano pieces newly orchestrated by the composer on Jan. 17-18. Fritz Reiner conducted. The orchestra and Stokowski made an eminently successful trans-continental tour in April and May.

The Cincinnati Orchestra, Eugene Goossens, conductor, listed for the 1936-1937 season 16 pairs of concerts and four operas, as well as four performances with the Monte Carlo ballet and five young people's concerts. A long list of eminent soloists was engaged for the season.

The Rochester Philharmonic Orchestra in November opened its fourteenth season. Of the eight evening and four afternoon concerts José Iturbi was to conduct eleven, Guy Harrison Fraser, three.

The National Symphony Orchestra, Hans Kindler, conductor, Washington, D. C., gave, in addition to its regular concerts, a Brahms Festival of three concerts Feb. 1-2, and a series of students' concerts in the high schools of the city.

The Seattle Symphony Orchestra, Basil Cameron, director, gave 39 concerts, including three concerts with Joseph Lhevinne, Percy Grainger and Giovanni Martinelli as soloists, this season being the first in many years in which the orchestra presented guest artists. The 1936-37 series listed Melchior, Szigeti, Gershwin and Rachmaninoff as soloists.

New Haven.—The New Haven Symphony Orchestra and the Civic Orchestra of New Haven combined this year under the unified civic direction of the New Haven Orchestra Association, with the coöperation of Yale University. This combining of forces promises eleven concerts for the season, 1936-1937, at moderate prices. Concert conducting will be shared by David Stanley Smith, Hugo Kortschak, Richard Donovan, and Harry Berman. The New Haven Symphony Orchestra, oldest of the

members of the group, dates its founding from 1895, and lists Horatio Parker as its conductor over a period of 25 years.

The Buffalo Philharmonic Orchestra, Lajos Shuk, conductor, had a successful season of ten concerts, a closing request program and five concerts for young people.

The Albany Philharmonic Orchestra, William Penny Hacker, conductor, gave a season of six concerts and a Spring Festival which included a performance of Beethoven's Ninth Symphony.

The National Orchestral Association, Leon Barzin, director, gave monthly concerts in October, November and December for its members who contribute to the work of training young musicians in ensemble playing.

Other Orchestras.—The Kansas City Philharmonic Orchestra, Karl Krueger, conductor, completed its third season, having had a large attendance at its concerts. Ernest Schelling and the municipally owned Baltimore Symphony Orchestra traversed with success ten concerts during the season which terminated in May. Richard Lert, a German emigré, accepted the conductorship of the Pasadena Civic Orchestra, a group of 80 musicians, many of them non-professional, and all unpaid, who give eight concerts a season. The Harrisburg Symphony Orchestra, George Raudenbush, conductor, inaugurated its seventh season in October, giving the first of its five concerts. The Birmingham Civic Orchestra, Dorsey Whittington, conductor, announced a schedule of four evening concerts and a small number of concerts for young people. The Hagerstown, Md., Symphony Orchestra, Stephen Deak, conductor, opened its second season of four concerts in October. The Los Angeles Philharmonic Orchestra, Otto Klemperer, conductor, in September launched a Continuance Fund campaign to enlarge the assured 16 weeks season to a 24-weeks season. The San Francisco Symphony, Pierre Monteux, conductor, began rehearsals for its twenty-fifth year. The Providence,

R. I., Symphony Orchestra, Wassili Leps, conductor, gave the first concert of its sixth season in November. The Lincoln (Nebraska) Symphony Orchestra, Leo Kucinski, conductor, began its tenth season on Nov. 16. The Vermont Symphony Orchestra, with Alan Carter as director, entered into its second season. The Elizabeth Philharmonic Society, August May, conductor, invited Alexander Siloti, Russian pianist, to appear in an all-Liszt program on Nov. 7, in commemoration of the composer's 125th anniversary, the program being the same that Siloti had played at Leipzig in 1883, which Liszt had attended. This concert was Siloti's farewell appearance. The University of Miami Symphony Orchestra opened its ninth season on Nov. 2, Arthur Volpe, conductor, Josef Hoffmann, soloist, in this opening concert. The New York Women's Symphony Orchestra, Antonia Brico, conductor, opened another season on Dec. 1. As part of their regular season, Eugene Ormandy and the Minneapolis Symphony broadcast Aaron Copland's "Statements" on Jan. 8. This work was the first of those commissioned by the League of Composers to be performed this season. The Duluth Symphony Orchestra of Duluth, Minn., Paul Lemay, conductor, completed its third season.

FESTIVALS

Berkshire Symphonic.—The tremendous success of the Berkshire Symphonic Festival given by Serge Koussevitzky and the Boston Symphony Orchestra, Aug. 13, 15, and 16, at Lenox, Mass. on the estate of Mrs. Margaret Emerson, has initiated a movement to make the festival an annual affair. Should its artistic eminence be maintained, this festival might easily become an affair of international importance. An average of 5,000 attended each of the three concerts, a tremendous number considering the relative isolation of the place chosen for the festival. Gertrude Robinson Smith is president of the Berkshire Symphonic Festival which is making every attempt to put the Festival on a per-

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manent basis and to raise the artistic level to a still greater eminence. The orchestra and its conductor have proposed that the number of concerts be increased from three to six, and that a permanent shed be erected to house the concerts, thereby making them independent of weather conditions.

Hartford.—The weekends of Feb. 8 and 15 saw a music festival at Hartford, Conn., put on by the Friends and Enemies of Modern Music, the group which three years previously had mounted that breathtaking affair by Virgil Thomson and Gertrude Stein called "Four Saints in Three Acts." This time Mr. Thomson assumed charge of the entire festival, which began with a showing of historical cinematic masterpieces, and which included a concert of music by composers from the Connecticut Valley, such as Sessions, Jacoby and Josten. There was also a performance of Stravinsky's "Les Noces," Sauguet's "La Nuit," and Satie's "Socrate," and a concert of ancient and modern music on ancient and modern instruments.

Princeton.—The Westminster Choir School of Princeton, N. J. met with enthusiastic response in its May Festival of American music, so much so that the board of directors have decided to make the event an annual affair.

Rochester.—The sixth annual festival of American music was held at the Eastman School of Music April 27 to May 1 in Rochester, N. Y., under the direction of Howard Hanson. In addition to the Eastman School Symphony Orchestra, the Eastman School chorus, the Rochester Philharmonic Orchestra, the Rochester Civic Orchestra and the Phi Mu Alpha Sinfonia Little Symphony, the Gordon String Quartet presented one program, coming to Rochester through the courtesy of the Library of Congress under the Elizabeth Sprague Coolidge Fund. The program of the Gordon Quartet consisted of three "firsts," string quartets by Quincy Porter, Walter Piston and Leo Sowerby. Other first performances during the festival

included Vittorio Giannini's "Theodore Roosevelt Symphony," Robert Delaney's "Symphonic Piece" and Burrill Phillips's "Courthouse Square."

Cleveland.—The last two weeks of May saw a chamber music festival by the Cleveland String Quartet and guest artists in Cleveland, O. Through the course of six concerts, the musicians performed 17 ensemble works of Brahms.

Berkeley.—A cycle of the music of Franz Schubert was given in Wheeler Auditorium on the campus of the University of California, June 4-July 9 through the courtesy of the Elizabeth Sprague Coolidge Foundation of the Library of Congress.

Folksong in Kentucky.—On June 14, the sixth annual American Folksong Festival was held at Traipsin' Woman cabin on the Mayo Trail near Ashland, Boyd County, Ky., under the auspices of the American Folksong Society with the cooperation of the WPA Federal Music Project. The project, the only one of its kind in the Federal setup, is under the direction of Jean Thomas, founder and director of the American Folksong Festival. Ballad singers from several counties took part in the festival. An old time singing school, warning and wassail songs, frolic and lonesome tunes, and sea chanties were sung. Old costumes and old dances were part of the festival.

Virginia.—The sixth annual Folk Conference and Festival at Marion and Whitetop, Va., was held in August and drew a large attendance. A ten-day conference heard speakers eminent in the collection and preservation of native folk music, both sung and danced. The festival itself, which filled two days, was an authentic country gathering, with many of the natives bringing in precious tunes preserved in some isolated hamlet and collected by the singer during the winter months. Many of the singers have by now learned the value of these old tunes, and their coöperation in bringing them to the festival each year is enlarging a valuable body of folk song. Prizes were distributed for the

best performances and the best tunes, and competing for the prizes were participants who offered fine samples of ballad singing, solo fiddling, banjo strumming, band playing (violins, banjos and guitars), and square and clog dancing. One of the best things in favor of these festivals is that they continue to be social gatherings where the natives can disport themselves, to their own pleasure and to the betterment of folk music and folk dancing in this country.

Worcester.—The seventy-seventh annual Worcester Festival opened on Oct. 5, and continued through six concerts that filled the week. Albert Stoessel directed the festival, as he has for a number of years; the orchestra consisted of musicians from leading symphonic organizations; the soloists included Helen Jepson, Lawrence Tibbett, and Josef Lhevinne as featured soloists, and Ruby Mercer, Pauline Pierce, Joan Peebles, Paul Althouse, William Hain, Frederic Baer, George Britton and Gean Greenwell; the chorus of the Worcester County Musical Association sang. Programs of merit, if not novelty, filled the six concerts.

New Jersey.—A symphonic festival of four concerts by an orchestra composed mainly of members of the Philadelphia Orchestra was held at Convention Hall, Asbury Park, New Jersey on Sept. 5, 6, and 7.

Bethlehem.—The Bethlehem Bach Festival, held every year during May in Bethlehem, Pa. by the Bethlehem Bach Choir and now conducted by Bruce Carey, presented four little known cantatas, the "Magnificat," "For the Righteous," "Jesus, My Beloved Saviour" and "Ye Shall be Weeping and Wailing" as well as the B minor Mass given for the twenty-ninth time by this choir.

SUMMER MUSIC

New York.—Each year, the importance of musical performances during the summer months continues to grow. This year saw a tremendous activity in old and new ventures. An eight-week season at the Lewisohn Stadium included concerts by the Philharmonic-Symphony Or-

chestra, appearances of soloists (among them Jascha Heifetz), three operatic productions and ballet performances. Willem van Hoogstraten and José Iturbi were the conductors. Soloists other than Heifetz were Bauer, Ganz, Iturbi, Gershwin, Thomas, Lashanska and Harshaw. Edwin Franko Goldman and his band completed their nineteenth regular season of concerts on the Mall in Central Park, New York City. The programs which included Bach, Wagner, Beethoven, Tchaikovsky, and Schubert proved most popular, according to a statement released by Mr. Goldman. The ten weekend performances of Alfredo Salmaggi's company at the New York Hippodrome, beginning Aug. 21, drew tremendous crowds, more than 6,000 a performance. Fritz Mahler, conductor, made his American debut at these performances, and gave clear evidence of his very fine abilities. One distinguished musician whom the summer music brought to this country was Fritz Mahler who came in August to conduct a performance of "Carmen" at the Hippodrome in New York City.

Saratoga.—At Yaddo in Saratoga Springs, New York, 20 composers and performers shared in a series of programs from Aug. 24 to Sept. 13, devoting part of the time to contemporary American music.

Berkshires.—The South Mountain Association, originated 18 years ago when Mrs. Elizabeth Sprague Coolidge made the place in the Berkshires a center for chamber music, has been incorporated and now owns tracts of land on the southern slope of the mountain, transferred to it by Mrs. Coolidge, her son and her daughter-in-law, together with buildings which provide exceptional facilities for the performance and enjoyment of chamber music. The South Mountain Quartet, Kathleen Parlow, Edwin Edeler, Conrad Held and Willem Willeke, gave six concerts there during the summer. Plans for next year include a widening of the scope of the concerts.

Washington, D. C.—In spite of many difficulties of adjustment with

MUSIC AND THE OPERA

the musicians' union, the National Symphony Orchestra finally arranged a series of sunset concerts on the shore of the Potomac at Watergate, near the Lincoln Memorial. Hadley, Beckett, and Sevitzy were listed as conductors.

Philadelphia.—The summer season of the Philadelphia Orchestra included a presentation of "Tosca," Smallens conducting, "Faust," "Aida," and "Martha," with the same conductor, and a four-piano concerto with Bauer, Levitzki, Ganz and Iturbi as soloists, the last named also conducting the performance.

Boston had its usual Pops season again with growing success under the able leadership of Arthur Fiedler and with many members of the Boston Symphony Orchestra playing. Mr. Fiedler also conducted a series of outdoor concerts on the Esplanade.

New Jersey.—At Asbury Park and elsewhere in New Jersey the New York Philharmonic Symphony appeared during the week before Labor Day with various conductors.

Cleveland.—The Great Lakes Symphony Orchestra, composed of 100 members of the Cleveland Orchestra, with Rudolph Ringwall conducting, gave nightly concerts from the end of June until early October at the Great Lakes Exposition. Guest conductors included Kindler, Rapee, Frank Black, Fraser Harrison, and Iturbi.

Atlantic City.—The Steel Pier Opera Company, Atlantic City, N. J., presented a well varied repertory which included "Faust" in English, Bach's "Phoebus and Pan," Pergolesi's "La Serva Padrone" and Beethoven's "Fidelio."

Cincinnati.—Cincinnati saw successful performances of Taylor's "The King's Henchman" and Verdi's "Rigoletto," of "Samson and Delilah," of "Cavalleria Rusticana" and of Ravel's "Bolero," when the Cincinnati Summer Opera Association had a successful season. Of the ten weeks' duration with unexpectedly large attendance, the repertory included George Gershwin's "An American in

Paris" with choreographic interpretation by Ruth Page, "Lakmé," "Pagliacci," "Cavalleria Rusticana," Verdi's "Otello" and John W. Hauserman's "Nocturne and Dance."

The Chautauqua Opera Association again presented performances at Chautauqua, N. Y., including "Bohemian Girl" and "Carmen."

The Los Angeles Philharmonic Orchestra gave a summer season at the Hollywood Bowl, the last three weeks of which were conducted by Otto Klemperer. Ernest Ansermet was conductor earlier in the season.

Others.—The San Carlo Opera Company at Jones Beach, the Hippodrome Opera Company at Metropolitan Lyric Stadium in Brooklyn, the Philadelphia Orchestra in Robin Hood Dell were others among the various summer enterprises which this year dotted the American scene.

CHAMBER MUSIC

During January, the Roth String Quartet of Budapest gave a series of five concerts in the auditorium of the Library of Congress under the provisions of the Coolidge Foundation.

The New Friends of Music, Inc., organized in May for a series of concerts beginning in November. The programs were devoted to the presentation of cycles of chamber music and lieder. Artists engaged included the Gordon, the Musical Art, the Perole, the Pro Arte, and the Stradivarius Quartets, as well as outstanding soloists.

The Pro Arte Quartet gave the New York premieres of Milhaud's Quartet No. 9 and of Werner Josten's "Quartet in B minor" at the final concert of the series of the League of Composers on April 13.

In August came announcement of the formation of the Coolidge Quartet from the Elizabeth Sprague Coolidge Foundation in the Library of Congress. The members are William Kroll and Nicolai Berezowsky, violins; Nicholas Moldavan, viola; and Victor Gottlieb, cello. The Coolidge Quartet will devote itself

primarily to work of the Foundation but it will also fill other engagements.

The Manhattan String Quartet went to Leningrad and Moscow in December on invitation of the Soviet Government for a series of concerts.

CHORAL

On March 27 Colin McPhee's "From the Revelation of St. John the Divine," commissioned by the League of Composers, was given a premiere by the Princeton Glee Club in New York City.

On March 29, the Harvard Glee Club and the Radcliffe Choral Society, G. Wallace Woodworth, conductor, gave a concert in Town Hall, New York City, at which Randall Thompson's "The Peaceable Kingdom" was given a first hearing.

ARTHUR WHITING

Arthur Whiting, "apostle of good taste" in music, died July 21, 1936. He exerted a tremendous influence on American musical taste, bringing as he did the best of chamber music of various periods, beautifully per-

formed, to college undergraduates in a number of universities. In addition to the university concerts, he organized semi-private concerts in the homes of music lovers in New York and elsewhere. He believed it best to play old music on the instruments for which it was written, and he zealously cultivated the clavichord and the harpsichord. He was not only a lover of the old; he also cultivated many manifestations of the newer spirit in music, and was one of the earliest and most enthusiastic interpreters of Brahms's music. He was also an early adherent of Debussy.

OSSIP GABRILÓWITSCH

September saw the death of Ossip Gabrilówitsch, a great pianist and a gifted conductor, who developed and built up the Detroit Orchestra, and whose musicianship and personal qualities endeared him to a very large and a very devoted public. An individualist, both as man and as artist, his death left a great void in American musical life.

THE THEATRE

BY JOHN K. HUTCHENS

DRAMA DEPARTMENT, *The New York Times*

THE GENERAL TREND

The trend of the year 1935 in the theatre (fewer but more carefully chosen productions) continued in 1936; and during the first half of the year the stage again appeared to be the better, artistically and financially, for this curtailment. The general economic improvement was reflected in the longer runs of the successes, the return of the gallery clientele essential to the "hit" show, and the welcome accorded on the road even to productions without stars. At the same time, the depression's chief effect on Broadway lingered: the public was still shopping carefully for its entertainment, since admission prices cannot be cut appreciably when operating costs are as

high as they must be under present conditions (real estate values, taxes and union labor scales). The theatrical season that ended in June was judged the best since 1929. The next, beginning in September, started slowly. It was hampered both by an absence of good scripts and a halt in the business relations of Broadway and Hollywood.

STAGE VERSUS SCREEN

The five-year minimum basic agreement, governing the relations of the Dramatists Guild with the Broadway producers, expired March 1, and the choice of a new contract was the source of much dispute. After long controversy, the producers on May 22 accepted the dramatists' demand

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for 60 per cent of sums paid for the film rights of plays, 40 per cent going to the producers. Proceeds of film sales had previously been divided equally.

The principal change in the contract, however, vested in the author all power for negotiating such film sales. This was important chiefly in the case of plays "backed" in whole or part by film companies. The dramatists had long felt that when a film company helped to finance a play, other film companies silently consented not to bid for the screen rights, thus lowering the price and reducing the author's profit. The new contract, therefore, required that the dramatist and an arbiter name a fair price to be accepted or declined within 48 hours by the participating company, after which the screen rights would be placed in the open market.

In a united front the film companies, which had backed 20 to 30 per cent of the New York shows in the season of 1935-36, refused henceforth to finance any Broadway play under the new conditions. They have maintained this stand to date, but the impasse will probably not endure long. The films need Broadway's script material as much as Broadway needs the films' money.

PRIZES

Eugene O'Neill received the Nobel Prize for Literature, the first American playwright to be thus honored. The award was greeted with virtually unanimous praise, Mr. O'Neill's place as our leading dramatist being still unchallenged. Also, his plays have been translated and produced abroad more widely than those of any of his American contemporaries. Mr. O'Neill himself, in acknowledging the award, professed his debt as an artist to Strindberg.

The newly formed Drama Critics Circle, comprising leading newspaper and magazine critics in New York, awarded first honors to "Winterset," by Maxwell Anderson (first presented by Guthrie McClintic in September, 1935). The Pulitzer Prize went to Robert E. Sherwood's "Idiot's De-

light," presented by the Theatre Guild, an exuberant, serio-comic charade set against the background of a future European war. With Alfred Lunt and Lynn Fontanne in leading rôles, the play in content and form was typical of Mr. Sherwood's later manner—a serious basic theme, highly theatricalized.

AMERICAN PLAYS

"Ethan Frome."—Assigned to the difficult task of dramatizing "Ethan Frome," Owen Davis and Donald Davis preserved the integrity of Edith Wharton's austere New England novel. In production it gained much pictorial beauty from Jo Mielziner's ingenious settings, and the pathos of its gaunt characters was admirably rendered by Ruth Gordon, Pauline Lord and Raymond Massey in the leading rôles.

"End of Summer."—S. N. Behrman again approached a modern problem by way of a comedy of character instead of the special pleading adopted by most of his socially-minded contemporaries. The result in "End of Summer" was the dilemma, wisely and urbanely stated, of the radical who, without sacrificing his own integrity, would marry a girl who happens to be wealthy. Ina Claire and Osgood Perkins headed a Theatre Guild cast.

"Russet Mantle."—Heretofore known as a writer of southwestern folk plays, Lynn Riggs in "Russet Mantle" tried successfully another method while retaining the same locale. His theme, written and played as comedy with only undertones of deeper meaning, was the failure of Americans to understand one another while speaking the same language.

"Reflected Glory."—One of the most respected of American dramatic craftsmen, George Kelly, returned to Broadway with his first play since "Philip Goes Forth" (1931). Although "Reflected Glory" found him discussing a recognizably old subject—an actress' choice between marriage and her career—the close-knit narrative skill of the writing and the power and magnetism of the play's star, Tallulah Bankhead, brought the

play considerable success as a piece of straight theatrical entertainment.

"Stage Door."—On several occasions, notably in "Once in a Lifetime" and "Boy Meets Girl," the stage has spoken up in terms of biting satire or boisterous farce against its rival, the screen. But in "Stage Door" George S. Kaufman and Edna Ferber centered the discussion in an actress' loyalty to the legitimate theatre despite the easy fame and money of the films. The serious emotion of this conflict pervaded the play, although Mr. Kaufman's direction was as usual high-spirited and witty. Margaret Sullivan returned from Hollywood to take the leading rôle.

"You Can't Take It with You."—Mr. Kaufman, this time with Moss Hart as collaborator, provided the year's only successful farce comedy—a warm and rambling tale of an eccentric family who live among themselves and their hobbies and defy the outside world fantastically. For Mr. Kaufman in particular it marked a departure in writing style, the humor stemming from character rather than the "gag" lines and neat construction that are his usual technique. Henry Travers, lately of the screen, returned to give one of his finest stage performances as a family patriarch.

"The Wingless Victory."—The first of three Maxwell Anderson plays scheduled for the 1936-37 season, this was of a New England sea captain who brought a Malay princess home to Salem in 1800. Mr. Anderson's approach to this conflict (which was that of Joseph Herge-sheimer's novel *Java Head*) took the form of a melodrama in blank verse, with Katharine Cornell and Walter Abel as the principals.

Other Plays.—"The Postman Always Rings Twice," a dramatization by James M. Cain of his own novel of the same title; "Spring Dance," a comedy of college life by Philip Barry; "Daughters of Atreus," a retelling by Robert Turney of the story of the House of Atreus, from the sacrifice of Iphigenia to the murder of Klytaimnestra; "Dear Old Darling,"

by and with George M. Cohan; "Plumes in the Dust," by Sophie Treadwell, with Henry Hull in the rôle of Edgar Allan Poe; "Matrimony Pfd.," adapted by James Forbes and Grace George from the French of Louis Verneuil, with Miss George as star; "Prelude to Exile," a play by William McNally about Wagner; "Ten Million Ghosts," a preachment against the munitions makers by Sidney Kingsley; "Sweet River," a modernization by George Abbott of *Uncle Tom's Cabin*; "And Stars Remain," a comedy of the conservative rich, by Julius J. and Philip G. Epstein; "Searching for the Sun," a drama of wandering children on the road, by Dan Totheroh; "Swing Your Lady!", a farce by Kenyon Nicholson and Charles Robinson; "Days to Come," by Lillian Hellman (author of "The Children's Hour"), a drama of a strike in a small town factory and its effect on workers and employers who have known each other from childhood; "Aged 26," by Anne Crawford Flexner, a romantic drama about John Keats; "The Women," a multi-scene play by Clare Boothe, with an all-feminine cast headed by Margalo Gillmore; "Around the Corner," a comedy of small-town, mid-western life, by Martin Flavin; "Brother Rat," a comedy of life in military school, one of three plays on that subject presented during the year. Although some of these plays were distinguished by good writing, acting or designing, none of them was an outstanding success and most were outright failures. They served to remind again that there is little place in the theatre today for the play that is neither very good nor very bad, although such plays not long ago were considered the backbone of the theatre.

SOCIAL DRAMA

Perhaps related to returning prosperity was a decrease in the drama of social protest, aside from certain productions of the Federal Theatre Project. The only decisive new talent to appear in the experimental field was Irwin Shaw who achieved immediate attention with "Bury the

Dead," a long one-act anti-war play. First presented at special performances by an experimental troupe, who were later sponsored for a regular engagement by a commercial manager, it was a bitter, poetic fantasy of the war dead who rise to confound a society which has betrayed them. Although the original premise had been used in Chlumberg's "Miracle at Verdun" (1931), the conclusion of Mr. Shaw's play was in radical contrast to the philosophical futility of the earlier work. The same troupe of players, organized as the Actors Repertory Theatre, continued in the Fall with "200 Were Chosen," a saga by E. P. Conkle of the Alaskan colonization project; it was a detailed picture of what the author considered a tragically mismanaged plan.

The Group Theatre offered one of its most interesting experiments in "Johnny Johnson," wherein Paul Green placed the idealism of an average young American against the horror of the World War. Beginning as a folk play, it proceeded in a series of fantastic episodes in which the hero finally and ironically was judged insane for his hatred of war and the elementary steps he took to end it. A musical score by Kurt Weill, solos and mass chants accented the ideology and emotion of the play. The Group's only other production of the year was "Case of Clyde Griffiths," a stylized abstraction by Erwin Piscator and Lina Goldschmidt of Dreiser's novel, *An American Tragedy*.

The most militant of the left-wing groups, the Theatre Union, made only one production: "Bitter Stream," an anti-fascist view of Italy, derived by Victor Wolfson from Ignazio Silone's novel, *Fontamara*.

REVIVALS

"Saint Joan."—Katharine Cornell, actress-manager, made still more secure her high place in the American theatre with a revival of G. B. Shaw's "chronicle play," last seen in New York in 1923-24. In support of her own performance, which was highly praised for its compassion and simplicity, were a number of excellent

actors, among them Charles Waldron, Brian Aherne, Eduardo Ciannelli and Arthur Byron.

"Cyrano de Bergerac."—Rosstand's play has been for years the most successful vehicle of Walter Hampden who brought it back for what he said was his last New York appearance in the play. In a limited but successful engagement he gave his 1,000th performance in the title rôle.

"Hedda Gabler."—For the second consecutive season Alla Nazimova turned to Ibsen in whose plays she made her début in the English-speaking theatre in 1906. She was again acclaimed, as she had been the year before with "Ghosts," as the foremost exponent of Ibsen now on the American stage.

"Hamlet."—The rival engagements of two English actors, John Gielgud and Leslie Howard, enlivened the Fall season. Mr. Gielgud, seen here only briefly in 1927 in a failure, arrived this time with a reputation as the finest Hamlet of his time; and the New York critics joined the London press in according him almost unanimous praise. He was supported by an American cast which included Judith Anderson (the Queen), Arthur Byron (Polonius), Lillian Gish (Ophelia), and as the year ended he promised to break John Barrymore's American record of 101 consecutive performances in the rôle. Mr. Howard, although an established favorite in the American theatre, was less well received critically and at the box-office. Both productions were notable for beauty of setting and costume.

"The Country Wife."—Wycherley's bawdy Restoration comedy, revived by Gilbert Miller and Helen Hayes, was important chiefly as a vehicle for the talent of Ruth Gordon. It was presented here directly following an engagement in London where Miss Gordon was the first American actress ever to be starred at the Old Vic. Though the play was handsomely mounted and costumed, it was the wit and resourcefulness of Miss Gordon in the title

rôle that earned the praise of the critics, here as in London.

"The County Chairman" and "Three Wise Fools."—For their annual Spring revival of one week, The Players brought back George Ade's *"The County Chairman"* (1903), with Charles Coburn in the title rôle created by Macklyn Arbuckle. As always, a cast of prominent "names" joined in this gala occasion. A similarly sentimental event found the 80-year-old William Gillette returning for an engagement limited to one week in *"Three Wise Fools,"* by Austin Strong.

IMPORTATIONS

Noel Coward.—The year saw a decline in the number and quality of new plays imported from abroad; none was so distinguished as *"Victoria Regina"* in 1935, for example. The most notable were *"Tonight at 8:30"* and *"Tovarich."* *"Tonight at 8:30,"* co-starring Noel Coward and Gertrude Lawrence, comprised three bills, each made up of three one-act plays by Mr. Coward. The author's stated purpose was to restore the lost prestige of the one-act play. In effect they re-emphasized the astonishing versatility of Mr. Coward as playwright, actor, director and composer. The plays themselves were a super-vaudeville of comedy, realism, fantasy, song and dance. It may be doubted, however, that they will signify a popular return to the one-act play form in the commercial theatre, for the bill as a whole represented a personal acting vehicle for its two stars and could hardly be imagined without them.

"Tovarich" and Other Plays.—*"Tovarich,"* adapted by Robert E. Sherwood from Jacques Deval's French original, was a gay comedy of Russian émigrés in Paris, with the leading rôles played by John Halliday and Marta Abba, the latter a distinguished Italian actress in her American début. *"Call It a Day,"* by Dodie Smith, was a cheerful comedy of English middle-class life, brightly acted in its two leading rôles by Philip Merivale and Gladys Cooper. Maurice Evans's perform-

ance as Napoleon illuminated *"St. Helena,"* the R. C. Sherriff-Jeanne de Casalis drama of the last years of the Emperor. *"Love on the Dole,"* by Ronald Gow and Walter Greenwood, adapted from the latter's novel, brought Wendy Hiller in a grim study of unemployment in Lancashire. Jay Mallory's (Joyce Carey) *"Sweet Aloes"* was a modern example of the well-made play school of Jones and Pinero. *"Night Must Fall,"* by and with Emlyn Williams, and *"Love From a Stranger,"* by and with Frank Vosper, told psychological horror tales. *"Lady Precious Stream"* was an adaptation by Dr. S. I. Hsiung of an ancient Chinese classic. *"Promise"* was an adaptation by H. M. Harwood from Henry Bernstein's French original, *"Espoir";* it presented Sir Cedric Hardwicke, one of England's leading actors, in his American stage début.

London and New York Taste.—Generally speaking, the plays from abroad emphasized again the great difference in the theatrical taste of London and New York. Save for *"Tonight at 8:30,"* *"Tovarich"* and *"Call It a Day,"* none approached here its foreign success. On the other hand, the D'Oyly Carte Opera Company returned to triumph again as it did two years ago with a repertory of nine bills. The Gilbert and Sullivan cult is now a recognized factor in the theatregoing public.

MUSICALS

Several elements again limited the production of musical shows on Broadway: their huge cost, the difficulty of casting them because many leading performers are in Hollywood, and the admitted excellence of musical films presented at popular prices. Accordingly, "legitimate" shows in this field were chosen and staged with great care, and the percentage of success was higher than among the dramatic productions. The Broadway musicals included: *The "Follies,"* Spring and Fall editions, starring Fannie Brice; *"On Your Toes,"* a satire on the Russian ballet by Richard Rodgers, Lorenz Hart and George Abbott; *"White*

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Horse Inn," the Erik Charrell spectacle, adapted by David Freedman from the German original and presented at the Center Theatre with William Gaxton and Kitty Carlisle; "Red, Hot and Blue!", a musical comedy with a book by Russel Crouse and Howard Lindsay, music and lyrics by Cole Porter, starring Ethel Merman, Jimmy Durante and Bob Hope; "New Faces," an intimate revue with Imogene Coca and the Duncan sisters; "Forbidden Melody," an operetta by Sigmund Romberg and Otto Harbach; "The Show Is On," an elaborate revue starring Beatrice Lillie and Bert Lahr.

THE FEDERAL THEATRE PROJECT

For the first time in the history of the American theatre, the stage was sponsored on a national scale by the Government. Created late in 1935, the Federal Theatre Project of the WPA began to function actively in January, 1936, with Mrs. Hallie Flanagan of Vassar College as national director, and Elmer Rice, playwright, as regional director for New York City. The immediate goal of the project was work relief for needy persons in all branches of the theatre, with provision for a non-relief quota of 25 per cent (later reduced to 10 per cent). Approximately \$13,500,000 was appropriated for the project during 1936, about half of this sum for use in New York City, the most active of the regional districts into which the country was divided. Some 12,500 persons were employed during the greater part of the year, 5,400 of them in New York. An order to reduce employment in December was met with protests and strikes, and the issue had not been settled as the year drew to a close.

The Federal Theatre productions in New York varied widely in type and quality, from the experimental to the commercial. Fifteen major producing units were set up, of which the most important were the Living Newspaper, the Negro Theatre, and the Popular Price Theatre. The choice of plays also was subject to controversy, Mr. Rice resigning in

February when Washington banned a Living Newspaper production, "Ethiopia," because it represented contemporary heads of foreign states. He was succeeded by Philip W. Barber.

The most notable production achievement of the project was the virtually simultaneous opening in 18 cities of 21 companies in "It Can't Happen Here," adapted by Sinclair Lewis and J. C. Moffitt from Mr. Lewis's novel. Other offerings were: The Living Newspaper: "Triple-A Plowed Under," the agricultural problem dramatized in a cinematic technique of many scenes; "1935," a rapid-fire review of the news events of that year; "Injunction Granted," a theatrical history of the labor movement.

The Negro Theatre: "Macbeth," the Shakespearean tragedy transferred from Scotland to Haiti, adapted by Orson Welles for the uses of an all-Negro cast which played it as a colorful and spectacular melodrama.

The Popular Price Theatre: "Murder in the Cathedral," T. S. Eliot's poetic drama of the martyrdom of Thomas à Becket; considered by most critics to be the most artistic achievement of the project to date.

Other productions typical of the Federal Theatre's range were: "The Dance of Death," libretto by W. H. Auden, score by Clair Leonard, a poetic ballet-fantasy of a decadent middle-class in flight from reality; "Battle Hymn," by Michael Gold and Michael Blankfort, a modern interpretation of John Brown of Harper's Ferry; "Help Yourself!", an adaptation by John J. Coman of a Viennese farce by Paul Vulpius; "Chalk Dust," by Harold A. Clarke and Maxwell Nurnberg, an experimental drama of regimentation in high school education; "Class of '29," by Orrie Lashin and Milo Hastings, which put the problem of the generation graduated from college during the depression; and a number of units giving vaudeville, circus and minstrel shows.

An important result of the project appeared to be its discovery of a new

public for the legitimate theatre. Many of its audiences have been made up in whole or part of persons who could not afford the commercial theatre's admission prices. The top price for the project shows is 55 cents and in many cases they are free.

SUMMER THEATRES

The Summer theatres that dot the East became a still more important factor in the life of the stage. Rustic or pretentious, they again eased the seasonal unemployment on Broadway, offered untrained actors a chance

to learn their profession and entertained and educated a public which otherwise would see few legitimate plays. About 500 players appeared in a total of 520 productions in 65 theatres from Virginia to Maine. The Summer theatres are not yet important, however, as tryout centers. Seventy-five new plays were tested, and of these not more than five reached Broadway. Revivals of comedies and melodramas were the most successful hot-weather fare, "Personal Appearance" leading with 30 different productions.

MOTION PICTURES

By FRANK S. NUGENT

MOTION PICTURE CRITIC, *The New York Times*

CINEMA AS RECOVERY BAROMETER

As a barometer of national prosperity, the screen is nearly as reliable as the statistics on car loadings, steel production and activity in the building trades. The cinema reflected the nation's advance along the high road to recovery during 1936 by reporting one of its most prosperous years since the depression. Audience attendance rose 10 per cent, bringing the weekly total to 88,000,000, the highest since 1930. The number of theatres in operation jumped to 14,500, this being accounted for by the construction of 550 new houses at an estimated cost of \$26,500,000 and by the reopening of 200 others. Hollywood's production budget was increased from \$125,000,000 to \$135,000,000.

Filmdom's self-satisfaction was reasonably boundless as the year ended. It viewed the immediate past with complacency and the immediate future with assurance. It felt it had weathered successfully the storms of censorship and internal revolt. England's threat to challenge Hollywood's domination of the world film market had been called, and American producers still held control. The internecine warfare promised by the Actors Guild, the Directors Guild

and the Writers Guild fizzled out, with the studio heads whipping the recalcitrants back into line. Emboldened by the success of others, new production units entered the field, did fairly well themselves and, by their competition, raised the standards of the established companies.

QUALITY OF PICTURES

The quality of pictures improved noticeably, particularly in the higher brackets, but there was no appreciable diminution in the number of inferior "Class B" films intended primarily to supply the demands of the double-feature theatres. The practice, incidentally, of offering two pictures for the price of one, with added lures in the form of bank night, screeno, free gifts of crockery and an occasional automobile raffle, seemed more strongly entrenched than ever; this, in spite of a national poll conducted by the Warner Brothers which indicated that the voters were opposed, by a two-to-one margin, to double bills. As the year ended, a survey disclosed that about 5,000 theatres employed some form of bank night. The system, obviously a lottery, was declared illegal in Texas and Illinois, but Chicago exhibitors were preparing to carry their appeal

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to the Supreme Court. The question should be decided in 1937.

THE COMEDY FILM

If there was any notable trend or cycle in the 1936 cinema, it was that of comedy. While the G-man pictures and the operatic films, so popular in 1935, carried on, the prevailing note in 1936 was one of genial, frequently feather-brained, humor. So persistent was the trend that the New York Film Critics, representing thirteen of the city's leading dailies, designated "Mr. Deeds Goes to Town" as the year's best picture. It might almost have been described as the picture best typifying the spirit of the screen in 1936. An analysis of the year's product probably would show that fully 50 per cent of all films produced in Hollywood during the season were comedies—straight, musical or romantic.

THE BIOGRAPHICAL FILM

Biography was well-represented, at least a dozen—of local and foreign origin, of good and bad degree—coming to the screen during the year. The subjects varied as much as their methods of treatment. Among them were Florenz Ziegfeld and Mary of Scotland, Louis Pasteur and Rembrandt, Cecil Rhodes and Joaquin Murieta, John Sutter and Florence Nightingale. Behind these two leaders in the cinema field trailed the Hollywood familiars: the murder mystery, the aviation melodrama, the Western story and the Pollyanna tales for its child prodigies.

THE SOCIAL FILM

In accordance with the tenets of the production code, the cinema continued to ignore controversial topics, or, in dealing with them, moved gingerly and tried to offend no one. True, "Fury" struck out rather boldly against lynch law and mob violence, but it tempered its argument with a happy ending and the pious hope that some day things would be changed. "The General Died at Dawn," written by Clifford Odets, upheld the rights of victims of capitalist and militarist oppression, but

the force of its argument was somewhat weakened by the circumstance that he was speaking of the down-trodden coolie victims of a Chinese war lord. The Nanking government, one might mention, took umbrage at this national slight and warned Paramount to withdraw the film from world circulation on penalty of a Chinese boycott of all its films. There is no record of the film's withdrawal.

For all its tiptoeing, there was evidence that the picture industry had begun to realize the public's interest in some of the less pleasant facts of life—unemployment, strikes, fascism, militarism, industrial routine, social inequalities and certain other weaknesses of our economic system. Charles Chaplin's "Modern Times," his first comedy in five years; "Mr. Deeds Goes to Town," "My Man Godfrey," "The President's Mystery," "Things to Come" and "Winterset" contained, in varying degrees and with varying honesty, certain references to these matters. In most cases, however, the pills were liberally sugar-coated, optimistic in conclusions and unlikely to drive the average spectator home filled with misgivings about this being the best of all possible worlds.

CENSORSHIP

Censorship, already mentioned in connection with "The General Died at Dawn," was less an annoyance to Hollywood in 1936 than it had been in 1934 and 1935. The Legion of Decency, in its second year, coordinated its film-reviewing work in New York and issued weekly bulletins from that headquarters containing the lists of current films divided into four categories: Class A—Unobjectionable for general patronage; Class A 2—Unobjectionable for adults; Class B—Objectionable in part, and Class C—Condemned. In its final list, issued on Dec. 31, the Legion rated 180 pictures in Class A, about 93 in A 2, some 39 in the "objectionable in part" category and only six, of which one was a re-issue, in the condemned group. Conspicuous in the Class C division was "La Kermesse Heroique," or "Carnival in Flanders,"

a French film which the New York critics and the National Board of Review both considered the finest foreign language picture of the year. The Legion first had found it unobjectionable for adults, had praised it rather highly in fact; but a month later it reversed itself. As the figures show, however, the clean films crusade had been successful: Hollywood was purified.

SINCLAIR LEWIS AND THE CENSOR

There were the usual major and minor skirmishes of censorship dictated by politics and economics, a hand-in-glove combination which acts constantly to restrict the screen in its expression. The most exciting were the Sinclair Lewis and George Bernard Shaw incidents. Mr. Lewis's novel, *It Can't Happen Here*, had been purchased for filming by Metro-Goldwyn-Mayer. Sidney Howard had written its script. Suddenly the author heard that the picture would not be made, after all. He condemned Will Hays, czar of the film industry, for banning it. Mr. Hays made denial and Louis B. Mayer, whose company had spent \$1,850,000 on "The Great Ziegfeld," soberly explained the picture would have cost too much. Italy and Germany let it be known they were pleased that the film would not be made. The answer, obviously, was that Metro, on the advice of Mr. Hays, was unwilling to jeopardize its foreign market by making an anti-Fascist picture; it was cheaper to write off the \$100,000 purchase of the Lewis book as a bad investment. Mr. Lewis had to be content with the WPA dramatizations of his novel.

L'AFFAIRE SHAW

The Shaw case was more dramatic, and more muddled. In a three-column letter to the editor of *The New York Times*, Mr. Shaw thundered that his script for a film version of "Saint Joan," which was to have been filmed in England with Elizabeth Bergner in the title role, had been stupidly and ruthlessly scissored by Catholic Action which, in turn, was

the Legion of Decency which, in still another turn, was the Hays office. Therefore, rather than submit to such indignities, Mr. Shaw would not do a picture of "Saint Joan" and proceeded to lash out in all directions against Hollywood censorship.

Mr. Shaw's factual errors were so obvious to anyone acquainted with the method of screen censorship that his denunciation was turned aside with ease. Catholic Action is a loose term for a method of thought. The Legion of Decency has no positive power to ban; it merely disapproves after the fact. Neither Hollywood nor the Hays office had seen the proposed script. The explanation appears to be that certain Catholic clergymen, misinterpreting the Shaw script, warned him of possible objections and suggested changes. Whereupon the Irishman thundered. It was a muddle, with some truth tangled in it, but "Saint Joan" has not been made.

LESSER CENSORSHIP SKIRMISHES

Some of the lesser censorship skirmishes of 1936 follow: Germany banned the Dionne quintuplets' picture, "The Country Doctor," because "non-Aryans" participated in making the film. It excluded "Romeo and Juliet" for the same reason. It outlawed another because the composer of its musical score was a Jew; it ruled out a fourth because one of its players had married a "non-Aryan" and it refused to accept Chaplin's "Modern Times" because it contained "Communist propaganda" and because there might have been some humorous comment on the resemblance of one famous mustache to another. Vienna showed the picture, but only upon the deletion of the scene when Charlie carries a red flag (a danger signal). London first refused to show the film of Marc Connelly's "The Green Pastures" because the Deity was depicted, but removed the ban later. Ontario's censor held it sacrilegious, but was over-ruled by a committee of clergymen. Quebec outlawed all Russian pictures; China objected to Mae

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West's "Klondike Annie"; Japan cut some footage from "The Princess Comes Across" because it twitted a Japanese detective. England removed scenes from "Rhodes" showing British machine-gunners mowing down Matabele natives, not because it had not happened, but because the Foreign Office currently was deploring Italian activity in Ethiopia. A threat of boycott and picket was enough to stop a New York showing of "Amphitryon," which, although made in France by a French cast, was backed by the German company, UFA.

FOREIGN PICTURE PRODUCTION

Continental Europe.—It was an uneven year for foreign film manufacture. The Russian cinema slumped badly, for no readily apparent reason, and only one film, "We Are from Kronstadt," deserved comparison with the better Soviet pictures of the past. "Revolutionists," "Gypsies" and "Three Women" had merit, too, but were far below the standard of Russia's best. "Nightingale," its first color film, was a disappointment chromatically and dramatically. The German screen, subsidized and controlled by the government, was equally listless. Italy, now planning a Hollywood of its own, introduced a few good films, of which the most distinguished was "The 100 Days of Napoleon," and Austria sent over three or four that were notable for photographic excellence rather than for the quality of story and performance. France, the most generous of the foreign-language film producers, contributed two which challenged the best of Hollywood and Denham: "La Kermesse Heroique" and "Les Miserables."

England, which started the year with high hopes of cutting into the American-controlled market, ran into a series of financial difficulties caused by too-sudden expansion. Capital, which had poured into the picture industry in the expectation of sure and immediate profits, was withdrawn or lost almost as quickly when inexperienced producers found themselves

in strange waters and well beyond their depth. At the end of the year several of these fledgling companies had gone into bankruptcy, and capital, closing its lines, was being more guarded even with the major companies. There promised to be a wholesale tightening of the industry in 1937, which probably will be reflected by a more cautious and improved product. There were, however, several pictures of more than usual merit, including "The Ghost Goes West," directed by René Clair for Alexander Korda's London Films; "Rhodes," with Walter Huston and Oscar Homolka, made by Gaumont-British; "Nine Days a Queen," a simple and perfectly played biography of the ill-fated Lady Jane Grey, directed by Robert Stevenson; Charles Laughton's "Rembrandt"; "Peg of Old Drury," with Anna Neagle; Elisabeth Bergner's "As You Like It," produced by her husband, Dr. Paul Czinner; and Alfred Hitchcock's "Secret Agent," with Peter Lorre. The H. G. Wells' film, "Things to Come," was a forward-looking photoplay which was not taken as seriously as Mr. Wells meant it to be.

OUTSTANDING PICTURES

"Ten Best" List.—It grew to the "best eleven" this year and, had this writer had his way, it should have been extended even further. *The New York Times* reviewed 548 pictures during the year, of which 314 were of Hollywood manufacture, 33 were British and 201 were in foreign languages. Some 15 of these might have been placed on any list of "bests." The following 11 were selected not merely for their merits, but because they were considered a representative cross-section of the best cinema achievements of 1936:

"La Kermesse Heroique," which has been mentioned before, was a gay, impudent, typically Gallic farce dealing with the invasion of the Flemish city of Boom by the Spaniards in 1616 and describing how the housewives, their quaking husbands in hiding, so royally entertained the visitors that Boom went tax free for

a year. It was from a screen play by Bernard Zimmer, directed by Jacques Feyder, produced by Tobis and played by Francoise Rosay, Alerme, Louis Jouvet, Jean Murat and other French players.

"Fury," directed by Fritz Lang for Metro-Goldwyn-Mayer, was a dramatic indictment of lynch law and mob rule. Although its ending was unsatisfactory, it had vigor, power and the quality of being pure cinema. **"Fury"** was based on a script by Norman Krasna and excellently performed by Spencer Tracy, Walter Abel, Edward Ellis, Bruce Cabot, Sylvia Sydney and others.

"Dodsworth" was an admirable film version of the Sinclair Lewis novel and Sidney Howard's dramatization of it. Mr. Howard, in adapting it to the screen; William Wyler, who directed; and Walter Huston, Ruth Chatterton, Mary Astor and Maria Ouspenskaya who played it, made it one of the most satisfying pictures of the year. It was produced by Samuel Goldwyn for United Artists.

"Mr. Deeds Goes to Town."—An honest, simple comedy, howbeit with social implications, this was humor of the American variety. It dealt with Longfellow Deeds, poet laureate of Mandrake Falls, Vt., who inherited \$200,000,000 and narrowly escaped being adjudged insane because he wanted to help the unemployed with it. Gary Cooper, Jean Arthur and an agreeable supporting cast responded perfectly to Frank Capra's direction. **"Mr. Deeds"** was based on a Clarence Budington Kelland story, adapted to the screen for Columbia Pictures by Robert Riskin.

"Winterset," Maxwell Anderson's prize play, was much improved in its transmission to the screen. A surging, poetic out-cry against injustice, an obvious outcropping of the Sacco-Vanzetti case, it emerged as a mature and dramatic film. Its adaptation was by Anthony Veiller, its director was Alfred Santell, and its cast included Burgess Meredith, Margo, Eduardo Ciannelli, John Carradine, Paul Guilfoyle, Maurice Moscovitch and Edward Ellis. It was

produced by Pandro S. Berman for RKO Radio.

"Romeo and Juliet."—The cinema restored the Bard to his proper pedestal by according his tragedy the most opulent and tasteful production it has ever received. The cast included Norma Shearer as Juliet, Leslie Howard as Romeo, John Barrymore as a perfect Mercutio, Basil Rathbone as Tybalt, Edna May Oliver as the Nurse. It was produced by the late Irving Thalberg for Metro-Goldwyn-Mayer and directed by George Zukor from an adaptation by Talbot Jennings.

"The Green Pastures."—Marc Connelly's naive, ludicrous and touching Negro religious fantasy, was conveyed to the screen in a wholesome and generally satisfying form. It was a great play and it became a great picture, thanks to Mr. Connelly; to Sheridan Gibney, his adapter; to the Hall-Johnson choir and an all-Negro cast headed by Rex Ingram as De Lawd and Oscar Polk as Gabriel. It was produced by Warner Brothers.

"The Ghost Goes West" was René Clair's first English-speaking comedy. It was the story of Murdoch Glourie, an elfin spook who haunted Glourie castle, played kissing games with the ladies, was carted off to America, with his castle, by a castle-collecting millionaire and finally avenged his clan by tweaking the nose of a MacLaggan. Robert Sherwood wrote the script. The players included Robert Donat, Jean Parker, Eugene Pallette and Morton Selten. It was produced by Alexander Korda for London Films.

"The Story of Louis Pasteur."—A new experiment for the cinema was this attempt to dramatize the conflict between a crusading scientist and entrenched medical stupidity. Possibly not the most accurate biography of Pasteur, but it caught the spirit of his life, the issues that he faced. There was a notable performance by Paul Muni. It was directed by William Dieterle, from a script by Sheridan Gibney and Pierre Collings, for Warner Brothers.

"These Three" was a shrewd and

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dramatically vital version of the Lillian Hellman play, with remarkable performances by two youngsters, Bonita Granville and Marcia Mae Jones, and some sober help from such adults as Miriam Hopkins, Merle Oberon and Joel McCrea. It was directed by William Wyler and produced by Samuel Goldwyn.

"The Great Ziegfeld."—Most lavish of the year's musical spectacles, this was also a complete, if flattering, biography of the great showman. Made with a princely disregard of the cost accountant, it could not fail to impress even the least easily impressed filmgoer. Among the players were William Powell, Luise Rainer, Myrna Loy, Frank Morgan, Fannie Brice and Reginald Owen. It was written by William Anthony McGuire, directed by Robert Z. Leonard and produced by Hunt Stromberg for Metro-Goldwyn-Mayer.

OTHER NOTABLE PICTURES

If the list could have been extended it would have included "Nine Days a Queen," "Rembrandt," "My Man Godfrey," "As You Like It," "Desire," "The Petrified Forest," "Beloved Enemy," "Sing, Baby, Sing," "Les Miserables," "We Are from Kronstadt," "The Gay Desperado," "Modern Times," and "Big Broadcast of 1937"—each of which was entertainment of a high degree.

AWARDS

The New York Film Critics, in their balloting, selected "Mr. Deeds" as the best picture of the year, "La Kermesse Heroique" as the best foreign language film, and recognized Luise Rainer's Anna Held in "The Great Ziegfeld" and Walter Huston's Dodsworth in that film as the best performances of the year. To Rouben Mamoulian for "The Gay Desperado" went their award for the year's best direction.

A NATIONAL POLL

The national poll conducted among film critics by *The Film Daily*, a trade paper, for the best pictures between Nov. 1, 1935 and Oct. 31, 1936 produced the following, in the order

of the vote: "Mr. Deeds Goes to Town," "The Great Ziegfeld," "San Francisco," "Dodsworth," "Story of Louis Pasteur," "A Tale of Two Cities*," "Anthony Adverse," "Green Pastures" and "A Midsummer Night's Dream*." The two with asterisks were shown in 1935.

PERSONALITIES

Although a few new faces appeared on the nation's screen in 1936 and won popular acclaim, there was no great realignment of the starring galaxy. The old idols continued, in the main, to be worshipped just as they had the year before. *Motion Picture Herald's* annual survey of box-office favorites showed that little Shirley Temple still was the nation's most popular player. The next nine, in the order named, were Clark Gable, the team of Fred Astaire and Ginger Rogers, Robert Taylor (whose rise from obscurity occurred within the year), Joe E. Brown, Dick Powell, Joan Crawford, Claudette Colbert, Jeanette MacDonald and Gary Cooper. Eight of these ten were on the 1935 list. Taylor and Cooper are the newcomers, replacing James Cagney and Wallace Beery.

Among the year's new faces were James Stewart, Bob Burns, Martha Raye, Gladys George, Simone Simon, the singing Bobby Breen, Tyrone Power and Frances Farmer.

NECROLOGY

The screen lost several of its best-known and best-liked members during the year. Among those who died were Andre Sennwald, the brilliant young motion picture critic of *The New York Times*; Irving Thalberg, husband of Norma Shearer and producer of such distinguished pictures as "Grand Hotel," "The Barretts of Wimpole Street," "Mutiny on the Bounty," and "Romeo and Juliet"; John Gilbert, star of the silent films; S. L. Rothafel (Roxy), one of the nation's best known showmen and a pioneer in the advancement of the screen from nickelodeon to palatial theatre; O. P. Heggie and Lennox Pawle, beloved character actors; Henry B. Walthall, long remembered

as Little Colonel in Griffith's "Birth of a Nation"; Tammany Young, the celebrated gate-crasher, a Damon Runyon caricature come to life; Thomas Meighan, one of the most popular (off and on the screen) players the cinema has known; and Charles (Chic) Sale who could play Lincoln or a Confederate soldier and make us believe he was both.

INDUSTRIAL ART

BY ALON BEMENT

EXECUTIVE DIRECTOR, NATIONAL ALLIANCE OF ART AND INDUSTRY

REVIVAL OF INTEREST

When the effects of the depression are accounted; when stock is taken and a final evaluation is made, it will be found that a considerable number of human endeavors have been put forward by it. Among other things on the credit side of the ledger, there is found written a renewal of interest in the arts. Not so much a renewal of interest in the arts of the Salon—of painting or sculpture or of high fashion, though favorable attention has been drawn to them—but a revival of interest in the art that has to do with appearances—the art that has to do with daily living in association with common objects of utility rather than the art that leads to what may be termed cultural or esthetic experiences.

APPEARANCE AS A MERCHANDISE SELLING FACTOR

The cause of this revival is directly traceable to the difficulty commerce and industry had in selling goods after the market disaster of October, 1929. For a considerable time confidence was so impaired that the exchange of money for commodities was reduced to an unheard of low. The predicament of a merchant with a normal supply of goods on his shelves or of an industrialist with a reserve stock in his warehouse was an unpleasant one. In the endeavor to move these stocks every known selling inducement was tried and tried again. And, in the end, after the old expedients of drastic price reduction and extra advertising campaigns had proved futile, it became apparent that good appearance was

a more important selling factor than it had previously been thought to be.

In combination with reasonable price and sound utility, appearance began as a controlling factor. This thought, once firmly fixed in the mind of the industrialist, added him to the ranks of the art conscious. A new and vigorous proponent of good design came into being—one capable of translating his interest into innumerable forms and colors suitable for distribution to the homes of the country.

Thus redesigned stoves, iceboxes, pans, knives, forks, spoons, motor cars, streamlined trains, and aeroplanes have already done something more than attract our attention by their increased utility; they have aroused an interest in how things look; an interest already widespread enough to begin to affect our whole environment and give hope that before long it may produce the betterment of that blight, the business part of the main street of the average small town and presage a return to the good taste that is our heritage and was in effect before the industrial revolution.

THE BACKGROUND OF UTILITARIAN ART

For two centuries, from 1620 to approximately 1840, art in the United States had a normal and natural development. In this period, the word "art" had no other meaning than the right way of making things; things being anything that were needed by man, either physical or spiritual. The maker of things was an artist. His product was accepted as a part of daily life. It was contrived accord-

ing to the need for it, made not for the connoisseur but for the customer, not for the museum, but for use.

During this epoch, the artist's only peculiarity lay in his exact knowledge of the way in which his work should be done. This knowledge was known, quite simply, as his art. The artist thought only of man and his needs; he was unaware of any right of his own to employ those needs as an opportunity for expressing his personality, his views, or his tastes.

Artist and consumer were culturally of one mind, for they lived against the same background, they shared the same views and tastes. The artist was potentially the consumer, the consumer was potentially the artist. No one, least of all the maker himself, thought of the maker as more intelligent or more sensitive than any other man; he was regarded only as expert in his particular craft. Artist and consumer had a common interest—an interest in the "*good of the thing to be made.*"

THE EVOLUTION AND PRESERVATION OF STANDARDS

This rational attitude toward art was the cause of the immediate improvement in both the utility and the appearance of objects imported, by the colonists and their immediate descendants, from the old world. It began with improvement of household utensils and implements of the field and led in the end to such products as the famous conestoga wagons, which carried the pioneers across prairie and mountain to the Pacific, and as the graceful clipper ships, which bore American goods to all corners of the earth. Art, through such creations as these conveyances of land and sea, led us to a true expression of our national ideals of design. Unfortunately, this normal development halted midway in the nineteenth century, with the industrial revolution. The power-driven machine replaced the craftsman artist, the low appearance value of quantity production overshadowed the standard of the single object made by hand. Quantity production meant low prices, and the people enthusias-

tically responded to their appeal. But quantity production also meant a sacrifice of beauty in the product. Taste declined, and the American home was soon crowded with objects cheap in price, cheap in appearance and often cheap in inherent value.

At this point the museum and the school took on new importance in the preservation of true standards. Curators and teachers, and, of course, artists aided by the best type of amateur, banded together in a courageous endeavor to hold high the ideal of the good. But in doing so, only one level of society was affected. The result was that the creation of pictures and of statuary was considered completely unnecessary in the mind of the average citizen. Under these conditions, it is not to be wondered at that the artist became the protégé of that single class, for as a matter of fact, there was no one else to employ him.

Nor is it any wonder that subtly, a change in attitude toward the artist evolved. The course of art was being more and more directed by an élite of taste. Museums and private collectors, art dealers and schools, artists themselves, and finally the general public, in the end, believed heartily that art was the exclusive prerogative of wealth and privilege, that its pursuit and enjoyment belonged to leisure. Even today, well into the twentieth century, we think of expressions in painting and in sculpture as art, and neglect the older conception of the artist as the supplier of man's needs.

The problem now is to bring about a balance between these two extremes of attitude, and to revive in the average man a consciousness of his responsibilities and his privileges as a creative artist. Only when he awakes to that consciousness will the position of the artist again be what it was in the great productive periods of the past. He will once more supply man's needs. Toward the achievement of this end, two courses are necessary; to create a state of mind in the general public which will de-

mand beautiful things for homes and communities; and, since the power-driven machine has been perfected to an almost human ability, to induce the manufacturer—the controller of the machine—to meet this need.

The tremendous influence of the well-considered Carnegie Corporation bequests to colleges and institutions of learning, the late increase in number and activity of the museums and the improved quality of art instruction in the public schools has already engendered a renewed interest and appreciation of art in society.

Intelligent self-interest on the part of industry with the assistance of a numerous young and rapidly developing corps of artist designers, seems to promise an increased industrial production of beauty. The situation is indeed hopeful.

THE ARTIST DESIGNER

The artist designer is not a new figure in the American scene. With the appearance of the machine he became a permanent fixture in industry and replaced craftsmen's instincts for design that were operative before the industrial revolution. But in spite of service beginning in mid 19th century, artist designers achieved only a very modest place for themselves until the end of the first quarter of the present century. The designer was regarded as *paid help* and was treated as such—he punched the time clock with other employees. The usual procedure was to call him to the front office after the officials, including the sales and production manager, had decided what the next production would be; present him with a folio of plates—acquired from traditional sources—and instruct him to make "something like" one of them or possibly a combination of two. Except in the rarest case he was not consulted at all as to the type of design to be used. This method, however, changed for the better after the Rockefeller report of the 1920 survey conducted by the late Professor Charles Richards was published.

DEVELOPMENT OF DESIGN APPRECIATION

The Art Alliance of America, the first association to interest itself in improving the appearance of American manufactured products, was organized in 1914. In 1917 the difficulty of obtaining European designs due to the submarine blockade focused for the first time full attention upon the abilities of American designers and gave them an opportunity to prove their worth. The Alliance took advantage of the situation and organized an exhibition of textiles. This is believed to be the first exhibition of American machine-made products declared to be art and held in an art environment. The idea was not acceptable to constituted art authorities and a considerable controversy ensued. However, it was accepted by a liberal press and a goodly number of visitors who attended the exhibition and when the metropolitan Museum of Art, at the instigation of Henry Kent, put on an exhibition of the same character in rooms adjacent to those occupied by the great masters in the fine arts the discussion came gradually to an end.

Soon thereafter (1923) free-lance designers, without affiliation with any given firm, appeared and achieved minor success in services to the industries. By 1927 ultra-modern foreign designers, attracted by tales of the generous fees paid by American industrialists began to trickle in from Western Europe. They were in the main capable but not sufficiently familiar with American consumer tastes to warrant sustained acceptance of their creations. They were exceedingly expert salesmen and gave the American designers a memorable demonstration of how to separate the manufacturer from his money. Under the circumstances, therefore, it was only a matter of time before some severe headaches developed in the industries that had underwritten their talent, with the result that a number of powerful firms declared themselves against designers and redesigning. Fortunately, by this time the revival of interest in appearances had developed sufficient momentum to over-

come the temporary setback, and by the beginning of 1929 the American designers had partially reassured industry by bringing out a number of convincingly good designs.

PROCEDURE IN DESIGN

Then without warning the major catastrophe of the depression involved the financial world and from it emerged the present-day practical procedure in design. The pinch of poverty again proved its efficiency in energizing creation. In the ensuing fight for existence the superficial aspects of design began to disappear, and by 1931 a group of able designers had developed who were willing to consider with the manufacturer practical methods of production and distribution of articles suited to the taste of the buying public. As an indication of the importance designing had acquired during the depression era it is interesting to observe that several free-lance designers earned \$75,000 each in 1934 and one over \$100,000. It is obvious that these men were no longer to be considered "paid help." They had establishments of their own, impressive suites on the upper floors of the best business buildings and staffs of well paid helpers. Their counsel fees were on a par with those of the most famous and skillful engineers. To raise the question here as to whether they were worth the enormous fees paid is futile. The depression had convinced the industrialist of the importance of appearance as an aid in selling. They were first in the field. Design was something the manufacturer had to have.

The criticism of one American writer that the major part of designers' work has been superficial—"face lifting" as he puts it—should not be taken too seriously, though there are

numerous instances such as the imposition of gilded stripes on a heavy traction unit and the decorating of a transcontinental bus with grotesque and meaningless wave lines, that seem to bear him out; these represent only minor weaknesses, incidents in the development of a new profession. In observing them it must be remembered there have been numberless instances of contributions to utility as well as to improvement in appearances of a great number of American products in the last few years.

The statement that a large number of the best publicized designers have achieved prosperity through their shrewd business acumen rather than through their ability to design, probably deserves more thought. There are among the lesser known men in the offices of design establishments and in the field outside, individuals who produce better designs than those who are now known as leaders, but here again it must be remembered that the young men devote all their time to designing and are not under the strain of directing an office, controlling a staff and paying the overhead. In the natural course of events, the young man of today will move up tomorrow, and as the profession becomes established it will develop a more equitable code of ethics favoring the beginner. There will be a larger group at the top who will probably have to be satisfied with smaller fees—the secondary group will receive more in proportion. Every industry will have its own designers. Infinitely more will be spent in the improvement of appearances but it will be spread over a larger field and the service to industry will cost less and the public will be better served.

XXVI. THE ARTS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ACADEMY OF ARTS AND LETTERS, 633 West 155th St., New York City.
AMERICAN ACADEMY OF ARTS AND SCIENCES, 28 Newbury St., Boston, Mass.
AMERICAN ACADEMY IN ROME, 101 Park Ave., New York City.
AMERICAN CERAMIC SOCIETY, 2525 N. High St., Columbus, O.
AMERICAN FEDERATION OF ARTS, The Barr Bldg., Farragut Sq., Washington, D. C.
AMERICAN FINE ARTS SOCIETY, 215 W. 57th St., New York City.
AMERICAN INSTITUTE OF ARCHITECTS, 115 East 40th St., New York City.
AMERICAN NUMISMATIC SOCIETY, 156th St. and Broadway, New York City.
AMERICAN SCENIC AND HISTORIC PRESERVATION SOCIETY, 287 Convent Ave., New York City.
ARCHAEOLOGICAL INSTITUTE OF AMERICA, 125 Elm St., Oberlin, O.
ARCHITECTURAL LEAGUE OF NEW YORK, 115 E. 40th St., New York City.
ARTISTS GUILD, 480 Lexington Ave., New York City.
FINE ARTS FEDERATION OF NEW YORK, 115 East 40th St., New York City.
GRAPHIC ARTS BOARD OF TRADE, 291 Broadway, New York City.
HISPANIC SOCIETY OF AMERICA, THE, 156th St., West of Broadway, New York City.
MUNICIPAL ART SOCIETY OF NEW YORK, 119 E. 19th St., New York City.
NATIONAL ACADEMY OF DESIGN, 175 W. 109th St., New York City.
NATIONAL ALLIANCE OF ART & INDUSTRY, 30 Rockefeller Plaza, New York City.
NATIONAL ASSN. OF WOMEN PAINTERS AND SCULPTORS, 42 W. 57th St., New York City.
NATIONAL INSTITUTE OF ARTS AND LETTERS, 633 W. 155th St., New York City.
NATIONAL SCULPTURE SOCIETY, 115 E. 40th St., New York City.

NEW YORK SOCIETY OF ARCHITECTS, 101 Park Ave., New York City.
SOCIETY OF ILLUSTRATORS, 334½ West 24th St., New York City.
SOCIETY OF INDEPENDENT ARTISTS, INC., 148 West 72nd Street, New York City.

DRAMA

AMERICAN SOCIETY OF COMPOSERS, AUTHORS AND PUBLISHERS, 30 Rockefeller Plaza, New York City.
DRAMA LEAGUE OF NEW YORK, Hotel Woodstock, 127 West 43d St., New York City.
DRAMATIST GUILD, 9 East 38th St., New York City.
ENGLISH FOLK DANCE SOCIETY, 235 East 22d St., New York City.
EPISCOPAL ACTORS GUILD, 1 E. 29th St., New York City.
INTERNATIONAL THEATRICAL PLAY BUREAU, RCA Building, New York City.
MOTION PICTURE FOUNDATION OF THE U. S. OF AMERICA, 247 Park Ave., New York City.
MOTION PICTURE PRODUCERS AND DISTRIBUTORS OF AMERICA, INC., 28 W. 44th Street, New York City.
THEATRE GUILD, INC., 245 W. 52nd St., New York City.

MUSIC

AMERICAN GUILD OF ORGANISTS, 1270 Sixth Ave., New York City.
CANTORS REGISTRY, 95 St. Marks Place, New York City.
CHORUS EQUITY ASSN. OF AMERICA, 117 West 48th St., New York City.
GRAND OPERA CHORAL ALLIANCE, 276 West 43d, New York City.
JEWISH THEATRICAL GUILD, 1560 Broadway, New York City.
NATIONAL BUREAU FOR THE ADVANCEMENT OF MUSIC, 45 W. 45th St., New York City.
NATIONAL MUSIC LEAGUE, 113 W. 57th St., New York City.
ORATORIO SOCIETY OF NEW YORK, 113 W. 57th St., New York City.
PHILHARMONIC-SYMPHONY SOCIETY OF NEW YORK, 113 W. 57th St., New York City.

DIVISION XXVII

EDUCATION

ELEMENTARY EDUCATION

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GENERAL

With the turn of the year the political tomtoms beat with increasing tempo and turned the attention of the American people toward the presidential campaign. Statement and counterstatement gave many exciting, if not enlightened, moments. Quietly in the midst of this bedlam, public education continued as in 1935 to pick up the pieces which had been widely scattered following the debacle of 1929. School income increased from new types of taxes; the cost of education tended more and more to be shifted from small local units to the broader shoulders of the states; teachers' salaries, chiefly in cities, moved up again toward pre-depression levels, and discontinued services returned to provide better for the many needs of children. Yet, as in the case of most social improvement, progress was often slow and uneven. Much remains to be done in 1937 in the rural areas and in such fields as recreation, guidance, and the education of parents, Negroes, and exceptional children. In reporting trends and events during 1936, the following sections will present briefly certain important areas or movements in elementary education, cite one or more specific illustrations, and refer to at least one publication where further details may be obtained.

REORGANIZATION

The American elementary school, until well into the nineteenth century, was a simple ungraded organization. About 1848 there was established in Boston the first graded school, the direct forerunner of the typical elementary school of today. The scheme provided for regular progress through "grades" and thereby stimulated the systematic arrangement of subject matter, the development of standards of progress, the adaptation of text books to the physical and mental maturity of pupils, and the specialization of teacher training. The plan also brought with it a mechanical action which ground pupils through a standardized regime regardless of individual differences. At no point did the inflexible program reap more failures than at the first grade where learning to read was of primary concern. Some easing of the strain came with the introduction of the informal kindergarten and later the nursery school. But only in recent years has there been any effort at fundamental reorganization. To an increasing extent the first three or four years of schooling are being organized without formal grade levels. The trend may be illustrated by the plan now used in Albany, New York where attention to "reading readiness" and individual maturity has eliminated failure among beginners. (Consult "The Albany Plan of Primary-School Organiza-

tion." *Elementary School Journal* 36: 413-15; February, 1936.)

SOCIALIZING THE CURRICULUM

During 1936 there has been further appreciation of the necessity of a social emphasis in the curriculum. New courses of study have appeared with more and richer content devoted to the social relationships of American democracy. Subject lines between areas of the social inheritance are disappearing. The old piece-meal lessons, consisting of facts to be memorized, are giving way before units or activities which call forth the abilities and the talents related to life-like situations. Pupils are being given increasing opportunity to search out facts for themselves, to appraise the sources of information, to weigh the evidence on all sides of questions, and to arrive at their own decisions. Through excursions and community surveys, children are being brought into contact with social processes in their natural settings. In this shifting, the so-called social studies—history, geography, current events, civics, etc.—are tending to become the center of the entire curriculum. Illustrations of these changes are to be found in the yearbook, *The Social Studies Curriculum* (NEA, Department of Superintendence), 1936, 478 p. (Consult also the yearbooks listed in this review under the heading "Significant Publications.") The social emphasis is showing itself not only in the social studies but in areas such as science and music. Two publications of the Association for Childhood Education illustrate this trend: *Adventures in Elementary Science* and *Music and the Young Child*, both issued in 1936.

VISUAL AND AUDITORY AIDS

The motion picture and still pictures are adding materially to making teaching more concrete and realistic. For years equipment has been quietly absorbed by the schools but not until 1936 was any survey made of the extent of these improved aids. Through the cooperation of the U.S. Office of Education and the American

Council on Education, there has been published the *National Visual Education Directory*. Among the striking conclusions of this remarkable survey are the following: (1) there is a rapid rate of growth in the school use of both radio programs and motion pictures; (2) the major use of motion pictures is in the fields of science, travel, geography, and history; (3) there exists a tendency to avoid films produced by commercial and industrial groups because of their advertising and propaganda features; (4) one-third (even higher proportions in the larger cities) of the school systems specified the use of visual aids in their courses of study; (5) a significant proportion of schools (and undoubtedly an increasing proportion) are providing first-hand contacts through trips and excursions to museums, to industrial plants, and to places related to classroom instruction; (6) among the serious impediments to increasing use of visual aids are the lack of funds to purchase equipment, the insufficient training of teachers, the shortage of information as to sources, and the unwillingness of laymen to recognize the merits of visual methods.

EMERGENCY NURSERY SCHOOLS AND PARENT EDUCATION

Emergency nursery schools were provided for the third year in 45 States, the District of Columbia, and Puerto Rico. In March it was reported that 1,500 schools were in operation with the possibility that 300 additional schools would be opened shortly. Employment was given in many of these schools to youth who were under the guidance of the National Youth Administration. By March, 22 States had designated a special supervisor for parent-education activities. (See *School Life*, March, 1936, p. 198.)

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Reports indicate that efforts to replace boarding schools with day schools are meeting with success. The mobility of the Indian had, until recent years, fixed the practice of re-

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moving children from their families in order that they might be exposed to the white man's education. Recent developments among the Navajos (reported in *School Life*, February, 1936, p. 165) indicate that the new policy is taking hold. Steps are being taken to revive Indian art. Early in the year the exhibit of paintings of North American children held at the Rockefeller Center in New York included 33 contributions by Indian children. This exhibit gives some slight indication of attempts to understand and to utilize the native culture in the educational program. Parent-teacher groups are increasing in number and promise to bring Indian adults to the support of the new educational policies. (*School Life*, April, 1936, p. 231.) Funds have been appropriated to make dental services available to the Indians and Eskimos of Alaska (*School Life*, September, 1936, p. 28). Thus in many ways, the possibilities are bright that the future of Indian education will compensate in part for many stupidities of the past.

EDUCATIONAL INTERPRETATION

The increasing complexity of school objectives and organization has led both parents and educators to establish devices for promoting understanding of their common problems. Parents have been active in the development of parent-teacher groups wherein lay and professional points of view might be focused on child problems. Educators have tended in recent years to utilize so-called "publicity devices" in public relations programs. Borrowed from the field of advertising and business, these mediums have often led into morasses of superlatives and quicksands of overstatement. Today most educators stand upon the firm ground that the first requisite of a program of educational interpretation is an efficient, modern school program. The second step is to show, through exhibits, demonstrations, photographs, and other realistic mediums, the many opportunities which the educational program has to offer both to children and to adults.

During 1936 there have appeared some unusual bulletins and reports designed to interest and inform laymen. Gone are the bewildering tables and the page after page of prosaic verbiage. In their places are simple statements linking the school work with family and community interests and with the engrossing current social scene. In abundance are to be found "story-telling" photographs and here and there enough statistical facts to bring out vital points. Only a few examples may be cited but they illustrate the general movement. The report of the New York schools, entitled *All the Children*, promoted favorable comment from coast to coast. Interesting pictures, graphs, and text lead the reader step by step through a description of the entire school program. Under the title *Something Better for Birmingham Children*, the Board of Education of Birmingham, Alabama, has presented the story of character development in the local schools. This report should help to bury for all time the well-worn cliché that public schools are "godless" institutions. The report of the San Francisco schools is another example of photographic art and typographical skill. Few laymen who see this bulletin will fail to read it and those who read it will have a new vision of what is happening to American children in efficient school systems. Many other cities might be cited, but a special word must be said for educators in small towns and rural areas who are making intelligent use of mimeographed reports.

SURVEYS

Since school systems usually set up educational goals and organize personnel and agencies for achieving these distant ends, it follows logically that general surveys are necessary from time to time to evaluate and to measure the progress that has been made. These surveys are of equal importance as reports to laymen of the "dividends" being realized on an important public investment. Until recently, most survey reports have been ponderous volumes overladen

with intricate tables and dull interpretative matter. Fortunately, 1936 has shown a tendency to break with tradition. With the aid of local school authorities, survey commissions have prepared unusually attractive reports of Evansville, Indiana (*Your Schools*, Board of Education, 173 pp.), and of New Rochelle, New York (*Your Schools*, Board of Education, 207 pp.). Both volumes reveal the socially significant strides made by modern school programs beyond the meager offerings of the traditional "littlered schoolhouse."

MENTAL HYGIENE

More than a decade ago the book *A Mind that Found Itself* by Clifford Beers made a number of people aware of the supreme necessity of early and careful diagnosis of mental difficulties. Mr. Beers offered practical suggestions for teachers to follow. Steadily through the past ten years, the movement has been supplemented by the activity of those interested in character education, physical health, crime prevention, mental testing, and general child study. Efforts are being made in countless numbers of schools to stimulate each child toward a wholesome development of his interests and talents. Unnecessary mental hazards are being modified, such as final tests, school marks, contests, harsh rules, unreasonable standards for achievement, and punishment. Curriculum content and methods encourage pupils to formulate their own purposes and to strive toward goals which they themselves readily accept. Under guidance, these purposes and goals become increasingly less selfish and more and more in the direction of the general welfare. The process results in fewer and less serious personality difficulties than the earlier regime which too frequently ignored important aspects of child nature and needs. Real appreciation may be gained of the blending of the efforts of the technician and the teacher in the volume *Personality Adjustment of the Elementary School Child* (NEA, Department of Ele-

mentary School Principals, July, 1936, 448 p.).

PLANNING IN EDUCATION

Within the past three or four years, 45 States have organized state planning boards. Wisconsin took an early lead and was followed after 1933 by a number of other States. More than half of these state boards had by 1936 included public education among their studies and investigations. One of the primary purposes of these planning agencies is to coordinate the efforts of many individuals and groups into a state plan. Even more significant, of course, these agencies contain the elements of a movement toward the intelligent use and conservation both of human and of material resources. For the nation as a whole, the Educational Policies Commission is working toward the formulation of guiding principles in education. The announcements and publications of this Commission will be of genuine influence if they catch the attention and promote discussion and action among both laymen and school people.

SIGNIFICANT PUBLICATIONS

A systematic study of the one-room schools of Texas (Annie Webb Blanton, *The Child of the Texas One-Teacher School*, Bulletin No. 3613, Austin: University of Texas, 1936, 111 pp.) shows that rural pupils are inferior to urban pupils in ability, in school achievement, and in socio-economic and physical status. Among the factors operating against rural pupils are short terms, poor equipment, insanitary conditions, and the socio-economic shortages of the rural environment. There are reasons for believing that similar conditions exist in almost every other state of the Union.

A publication of special importance to the movement toward the consolidation of rural schools has been published on the subject of transportation (NEA, Research Division. "Safety in Pupil Transportation." *Research Bulletin*, November, 1936, 48 p.). Three million boys and girls

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are transported to and from school daily in conveyances provided by school authorities. In cities thousands are carried to special schools. Buses are usually employed in this work and in many instances great care is exercised in providing competent drivers and maintaining the equipment in first-class shape. At the same time, as this bulletin reveals, state laws are in many instances wholly inadequate in requiring proper safeguards. The progress made in a few States deserves widespread study and emulation.

From time to time there have been reports of the adverse conditions under which teachers are employed. A recent investigation of teachers' contracts (NEA, Committee on Tenure, *Teachers' Contracts: With Special Reference to Adverse Conditions of Employment*, 1936, 32 pp.) has revealed some of the efforts of school trustees to control the personal life of teachers. Instances are cited where teachers have been forbidden to smoke, to dance, to go automobile riding, to leave town over weekends, and even to fall in love. In 67 per cent of the 400 contracts examined, teachers agreed to abide by the rules and regulations of schoolboards, although in most instances they have nothing to say about the wisdom or necessity of such rules.

In times of great economic hardship and social stress, there is usually a tendency to attempt to restrict certain types of behavior through legislation. The recent economic depression doubled the number of States in which oaths of office or pledges of loyalty are required of teachers. Today there are 21 States and the District of Columbia with some type of requirement. In 11 of these, teachers are compelled to teach or to refrain from teaching certain specified things. The nature and specific text of present requirements are summarized in *Teachers' Oaths*, a mimeographed report of the NEA Research Division, 31 p.

Each year the Federal Office of Education publishes a number of useful reports at all levels of the educational program. A leaflet,

Educational Facilities for Children on Federal Government Reservations, 1934-35 (Leaflet No. 46), treats in detail a problem touched upon in the 1935 issue of *THE AMERICAN YEAR BOOK*. At least 20,000 children on Federal reservations were, at the time of the survey, attending school at the expense of local and state taxpayers, because the Federal Government provided no school facilities for the children of its employees. Those interested in school health problems will be interested in *Training of Elementary Teachers for School Health Work* (Pamphlet No. 67) and *What Every Teacher Should Know About the Physical Condition of Her Pupils* (Pamphlet No. 68). References in the field of teacher training published since the National Survey of the Education of Teachers have been reported in *Education of Teachers: Selected Bibliography* (Pamphlet No. 66). The bulletin, *Elementary School Graduating Examinations* (Bulletin, 1935, No. 16), reports that 21 States administer statewide examinations at the end of the elementary school period. In 16 other States some or all of the counties administer graduating examinations on a countywide basis. After urging the discontinuance of all such examinations, the bulletin recommends a procedure in line with current theory and practise in the field of testing.

Several yearbooks issued during 1936 are of real significance to elementary education. The reports prepared by the NEA Department of Superintendence and the NEA Department of Elementary School Principals have been mentioned in preceding paragraphs. In *Rural School Libraries* (NEA Department of Rural Education), attention is given to the problems in providing library services to rural schools and communities. The scope and purposes of the social studies have been treated in the yearbook, *Elements of the Social Studies Program* (National Council for the Social Studies, NEA). The Council also published in 1936 a bulletin, *Selected Test Items in American History*, which will be a

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source book of questions from which local tests may be constructed. Guidance among the perplexing supervisory problems in the field of English is given in *The Development of a Modern Program in English* (NEA, Department of Supervisors and Directors of Instruction). The National Society for the Study of Education issued its 1936 yearbook in two parts. Part I, *The Grouping of Pupils*, has given teachers and administrators an opportunity to compare their own point of view on pupil grouping with the views (often conflicting) of recognized experts. Part II, *Music Education*, treats in considerable detail the theories and practises in this most interesting field.

The American Educational Research Association continues its most useful efforts to summarize research through five annual issues of the *Review of Educational Research*. The titles of numbers issued during 1936 are: February, "Mental and Physical Development"; April, "Pupil

Personnel and Counseling"; June, "Psychology of Learning, General Methods of Teaching, and Supervision"; October, "History of Education and Comparative Education"; and December, "Mental Hygiene and Adjustment."

The California State Department of Education added a companion volume to an earlier publication in the field of the activity curriculum. The new report, *Teachers' Guide to Child Development in the Intermediate Grades*, focuses attention upon the trend of organizing learning around large centers of human experience.

Finally, notice should be given to the picture story book for young children entitled, *A Day At School* by Agnes McCready and Ruth A. Nichols (E. P. Dutton and Company, New York, 80 p.). This little volume is a fine example of the modern photographic picture book for children. The story is the day's program in a moderately progressive first-grade classroom.

SECONDARY EDUCATION

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GENERAL

The trend toward universality of secondary education for adolescent youths of America, which has followed an astoundingly consistent accelerating curve for three and a half decades, continues. Not only has a new "high" been attained but also, at long last, a general recognition that the school must provide for all youths of high school ages without restriction based on previous preparation, attainments, or ability. There has not been any sudden or dramatic change on the part of schoolmen and the public in their willingness to receive and retain these youths in high schools and junior colleges and in supplementary public educational institutions. Rather has it been a coalescence of emergency and routine provisions for the education of

youths and young adults that has gradually impinged and pressed upon the stereotypes and practices of men and women who have previously been habituated to very different scholastic conceptions and standards.

While data for the school year 1935-36 are not yet available, the enrolment in all secondary schools as of September, 1935 was doubtless over 7,000,000, representing over 70 per cent of all youths of high school age. Survival rates in the high school grow markedly higher, so the percentage is doubtless to be larger in 1936.¹ When one considers the rural and village areas of America where the need for universal secondary education is not acute, especially those of the South and South-

¹ E. M. Foster, *School Survival Rates*, *School Life*, Vol. 22, No. 1, September, 1936, pp. 13-14.

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west where popular support for extended education of Negroes, Mexicans, and Indians has not yet gained force, it is apparent how nearly universal are school provisions in urban America.

PROPHETS, LEADERS AND PROGRAMS

Last year we noted the spiritual elan promoted in the profession by the tercentenary of the American secondary school. While the celebrations of the centenaries of the works of Horace Mann and Mark Hopkins and the quadricentenary of the birth of Erasmus have not so great a dramatic significance for secondary education, they deserve notice because the spirit of each of these men remains a vital force in the new orientations of the high school. Mann's successful battle for the common school laid the groundwork for the comprehensive public high school; the Hopkins tradition of personal influence is mighty in promoting more humane teacher-pupil relationships; Erasmus' satire on scholasticism remains the acknowledged forerunner of those who attack the institutionalism of the high school.

National leadership of the democratic aspirations and adjustments of secondary education is asserted in many quarters. The Federal Office of Education is coordinating and directing or influencing the educational projects of emergency and permanent agencies set up by the National Government—the Civilian Conservation Corps, the Works Progress Administration, the National Youth Administration, and the Tennessee Valley Authority.

From the various branches of the National Education Association, vigorous programs of study and policy-making have emerged. The Department of Secondary School Principals Committee on the Orientation of Secondary Education issued its report in January, 1936 defining and debating the issues that confront the high school. The Department of Superintendence Educational Policies Commission has embarked on a five-

year project seeking a program of educational development in keeping with the social changes that the school must reflect and serve.

The various committees of the Progressive Education Association continue to explore the possibilities of curriculum modification, of measurement of true educational changes, of adolescent needs and resources, of human relationships, and of the adequacy of progressive educational procedures in preparing students for college life and work. The results of these studies are of great potential importance for high school administrators and teachers.

State and city departments of education and professional schools of education are, in very many cases, giving splendid support to the contemporary reorientations in secondary education. Following the lead given by Virginia and California and by some cities, Ann Arbor, Michigan, and New York City, for example, sweeping reforms are being widely projected throughout the country. These reorientations involve much more than mere tinkering within the present framework of courses and subjects and school units; they call for universal reorganizations of curricula and guidance and student activities and cumulative records and community coordinations. They recognize that the physical and mental health of youths and adults, the uses they make of leisure time, their attitudes toward law and order, toward peace and war, toward economic and political programs, toward jobs and unions, and especially toward continued education, are inevitably bound up in their present school lives.

The possibility of maintaining a cloistered, lesson-learning, academic cultural institution insulated from life is increasingly recognized to be impossible. Despite the very valuable protest of such an able critic of these trends as Dr. John L. Tildsey whose Inglis Lecture of 1936 entitled "The Mounting Waste of the American Secondary School," has been widely discussed, the flow of proposal and example, reflected by magazine

articles, convention addresses, and other instruments of public information and interest goes forward unchecked toward the achievement of the "new deal" in secondary education.

DEVELOPMENTS IN VERTICAL READJUSTMENTS

No authoritative statement is possible at this time regarding the permanency or even the continuation of changes that have taken place in the various units of secondary education. Many adaptations have taken place during the past six or eight years to meet the immediate problems which secondary schools faced.

In a number of cities, (*e.g.* St. Louis, Rochester, N. Y., and New York City) in which junior high schools and six-year high schools had been included as units in the secondary educational system, the rapid growth of senior high school enrolments during a period when little building construction could be undertaken, together with static or even decreasing elementary school registrations, have resulted in changes that, though probably temporary, may be continued for some years. Junior and junior-senior high schools have in many places lost their seventh grades, have been extended upward to contain tenth grade pupils, and in St. Louis, the former Blewett Junior High School is now a senior high school. Such modifications are not altogether bad, however, for the humane spirit characteristic of junior high school teachers has penetrated the senior high schools more convincingly under such conditions than it could have done through mere supervision or through more gradual transitions.

IMPENDING EXPANSIONS OF HIGH SCHOOL SERVICES

Nevertheless, four-year and three-year senior high schools have themselves witnessed most profound changes in spirit and in curriculum. In the early years of the depression there were curtailments in the very areas of the arts and of manual education in which the non-academic youths had most successfully partic-

ipated. It was necessary, therefore, to accept them in such courses as remained. It proved futile to fail them in these academic subjects because they did not, often legally they could not, drop out of school. And so, at last, the high school faculties are endeavoring to modify their curriculum and method so as to encourage non-academic pupils to gain in skills and attitudes which the school has heretofore merely pretended to teach them. With the return of confidence and increasing real estate values, high schools are again expanding their curricula to include more of music, home economics, art, and the rest—a welcome restoration. Their temporary loss was, however, truly a blessing in disguise in many high schools.

Despite the increasing tolerance and the administrative-instructional adaptations of the general high school, special-type high schools are occasionally established to meet the needs of pupils who differ markedly from those who succeed or who accept life in the regular schools. The new Arts High School and the Benjamin Franklin High School in New York City, the Jackson Technical School in Lansing, Michigan, and the Edison Technical School in Rochester are cases in point.

With the increases in enrolments in most high schools, and with progress in State-aided consolidation of many rural districts, the percentage of very small high schools tends to decrease. Nevertheless, as recently as 1933-34, the average size of the rural schools was only 61. Some steps have been taken to revolutionize these small schools through individualizing instruction and abolishing or greatly decreasing class work.

The upward extension of the high school by providing for post-graduate students and occasionally by superimposing a junior college on the senior high school organization has been accelerated by the depression. The establishment of Federal and state aided junior colleges to provide employment for teachers and opportunity for students has to a large extent been merged with the

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adult education movements under the Works Progress Administration.

Night high schools and summer high schools were victims of the depression in its early years. With the increasing interest in providing opportunities for the education of those temporarily or permanently unemployed and not in school, provisions for the inclusion and expansion of evening and summer opportunities have been more frequently made. Federal aid, the adult education movement, and the recreational motive have influenced the character of these rejuvenated institutions. Last summer, Westchester County, N. Y., included a camping project for those youths not otherwise provided for.

For the past 10 or 15 years there have been numerous exchange teacherships between school systems in different sections of the country. During the year 1935-36, what is probably the first exchange principalship involved George Hetzel of Marshall Junior High School, Pasadena, Calif., and E. Scott Holbeck of the Woodrow Wilson Intermediate school of Passaic, N. J.

DEVELOPMENTS WITHIN THE ADMINISTRATION, CURRICULUM, AND SCHOOL LIFE

The social changes of the outside world affect the curriculum, administration and student activities of the school, somewhat belatedly and unevenly, to be sure, but inevitably. The gathering momentum noted in previous years has continued and been accentuated during the current year. Reports appearing in the educational magazines record many instances of experiments in curriculum integration, of provisions for curricular and personal guidance, of socialized and functionalized subjects, of curricularizing many educational opportunities generally accepted as "extra-curricular," of radical readjustments involving entire schools, school systems, and even States, and of the wide-spread influences of university conferences, of the Society of Curriculum Study, and of the North Central Associa-

tion of Colleges and Secondary Schools.

Space permits only the mention of some of the more interesting and dramatic of these manifestations of the new spirit of adventure and orientation. At the University of West Virginia demonstration school, a freshman class is being taught by one teacher in an integrated curriculum that avoids all subject lines.² The purpose here, as in Shaker Heights, Ohio,³ and in Roslyn, Long Island,⁴ is the integration of the pupils and the improvement of the social and personal attributes of the class.

Such integration is a bold departure from the mere coordination of subject-matter and reenforcement among departments of instruction which have typified the examples reported in previous years. It involves a bold break from the "quest for certainty"; information and skills are subordinated to attitudes and enthusiasms for continued learning.

Many very valuable, if less revolutionary, curricular innovations, actual or proposed, are receiving much attention and extending wholesome influence in the secondary schools. The Report of the Curriculum Commission of the National Council of Teachers of English, published in the autumn of 1935, is entitled *An Experience Curriculum in English*;⁵ it capitalizes the social practices of community life both within and without the school—dramatics, debate, radio, telephone, magazines, moving pictures, and the rest. In the broad field of the social studies and correlated English, science, mathematics, art, and industry, the second volume of *Building America*,⁶ a pictorial

² Educational News and Editorial Comment. *The School Review*, Oct. 1936.

³ Fred H. Bair. Integration Making for Integrity. The Junior-Senior High School Clearing House, May 1936.

⁴ F. R. Wegner and Harry Langworthy. Roslyn, N. Y., Moves Toward Integration. The Junior-Senior High School Clearing House, Oct. 1936.

⁵ Report of the Curriculum Commission of the National Council of Teachers of English. D. Appleton Century Company, 1935.

⁶ Society for the Study of the Curriculum, New York, 1935-36.

monthly sponsored by the Society for Curriculum Study, has continued its contribution to vitalizing and integrating the educational opportunities of the secondary school.

The same tendency to recast subjects so that they may fit into aspects of integrated curricula is indicated in current articles and books for other subjects. Music organized into units related to literature, art, geography, and history;⁷ foreign languages planned to stress social and cultural meaning rather than linguistics;⁸ mathematics as a language of civic-economic-scientific, home economics, and health problems;⁹ business subjects as social sciences as well as office technics;¹⁰ and art as an expression of social and individual experiences and purposes,¹¹ all typify such reconceptions. In some cases, these reorientations may be attempts to climb aboard the "band wagon"; generally, however, their sincerity is attested by the fact that the authors had been both urging and practicing such correlations long before the current popularity of "integration" gained momentum.

New courses, some of them connected with and others independent of already accepted subjects, are making their appearance in progressive secondary schools. At Balboa High School in San Francisco, for instance, "Industrial Design" intended to enable pupils to "talk with pen and pencil" in connection with shop-projects; "Buying I and II" are aspects of consumer education; "Culture of the Nations" consists of a rapid survey of men and movements in the fields of culture and government of modern coun-

tries; and "Practical Trigonometry" is a direct study of formulas and logarithms for non-college preparatory pupils.¹² In other schools, there have been developed courses in automobiles, their construction, uses, and dangers;¹³ in business management of the home;¹⁴ in cooperative endeavors not only of consumers¹⁵ and producers¹⁶ but also of peace and international conciliation groups;¹⁷ in appreciation and making of photographs and motion pictures;¹⁸ in social living and social pioneering;¹⁹ in newspaper services,²⁰ and many other aspects of life.

GUIDANCE INNOVATIONS

In the areas of guidance and adjustment, there have been several interesting developments of which the following are typical. At Thomaston, Ga., a Diversified Occupational Program, an outgrowth of the school's part-time cooperative vocational educational program, seeks to advance both civic and vocational adequacies of all pupils.²¹ A seventh grade Planned Course in Adjustment to School Life is used at Minot, S. D.,²² and an actual course in Student Government is announced at Sacramento, Calif.²³ Within the field of guidance itself,

¹² Educational News and Editorial Comment. *School Review*. October 1936.

¹³ Cf. A. W. Whitney. Man and the Motor Car. National Bureau of Casualty and Surety Underwriters, 1936.

¹⁴ P. H. Mitchem. Objectives of Training for Home Living. The Balance Sheet. October 1936.

¹⁵ Cf. R. S. Hadsell. Developing Intelligent Consumers. *Journal of the N. E. A.* October 1936. Also Consumer Buying in the Educational Program for Homemaking. *Vocational Educational Bulletin*, 182, Home Economics Series, No. 19.

¹⁶ J. D. Williams. The Norris School Cooperative. Jr.-Sr. H. S. Clearing House, June 1936.

¹⁷ Cf. W. G. Hoffmann, *Pacific Relations*. McGraw-Hill Book Company, 1936.

¹⁸ Cf. *Progressive Education*. October 1936 (Entire issue).

¹⁹ Cf. G. M. Addison. In the Area of Social Living; and Paul Hanna, Developing a Sequence with Social Rootage. *Cal. Journal of Sec. Education*, Oct. 1936.

²⁰ *The News Letter*. June 1936.

²¹ With Georgia High Schools. In University Items. April 1936.

²² A. W. Johnson. In the Junior-Senior High School Clearing House. May 1936.

²³ Educational News and Editorial Comment. *The School Review*. Sept. 1936.

⁷ L. B. Pitts. Music Integration in the Junior High School. C. C. Birchard and Company, 1935.

⁸ Willard Beatty and George A. Boyce. Mathematics of Everyday Life-Health Unit. Inor Publishing Company, 1936.

⁹ I. L. D. Grant. Foreign Languages as Guided by Principles of Scope and Sequence. *California Journal of Secondary Education*. October, 1936.

¹⁰ O. B. Paulsen. Socializing the Business Curriculum. Jr.-Sr. Clearing House, Oct. 1936.

¹¹ Margaret Erdt. Art as Related to Scope and Sequence. *California Journal of Secondary Education*. October 1936.

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there has continued the trend toward the promotion of personality integration rather than toward specialization either in further education or for careers.²⁴

EXPERIMENTATION IN METHODS OF TEACHING

Improved methodology adapted either to subjects or to pupil types has been reported. Most of the reports reflect conventional subject-learning conceptions of education, some reflect mere concern with certification qualifications of teachers. In four areas, however, there are reported significant developments: At Whitney, Texas, a "Study in School Program";²⁵ at the John Marshall High School, Cleveland, the "Jones Rotary System of Instruction" in use in courses in science, whereby lecture-demonstration, directed study, and individual laboratory work rotate with pupil groups of varying sizes;²⁶ at New York City, experimentation with special methods adapted to dull normal pupils;²⁷ and the school library and museum developed to promote pupils' adventures in leisure and research at Edgemont, N. Y.²⁸

ARTICULATION OF SCHOOL AND COLLEGE

In September, 1936, the first 1,000 graduates of the "thirty unshackled" secondary schools included in the notable Progressive Education Association experiment are entering college. These entrants have had at least three years of education and experience in one or another of the 30 representative schools selected for the adventure of preparing pupils without regard to formal requirements or the definitions of the Col-

lege Entrance Examination Board. While the success in college of these youths cannot be measured for some years, the effect on the schools which have been freed from the fear or the excuse of restraint is being watched critically by progressive schoolmen. On the whole, the changes so far have been relatively timid and half-hearted.

Wilfred Aikin, chairman of the Commission on the Relation of School to College, reports that the experiment has advanced the administrative practices in these schools by making them more purposeful, by promoting teacher-participation in educational responsibilities, by diminishing the barriers between subject departments, by improving teacher-pupil relationships, by directing attention to individual pupils, by encouraging community relationships of the school, by lengthening the school day, by increasing mutual understanding between schools and colleges, and by directing attention to evaluation of pupils' educational progress. In the realm of the curriculum, he asserts that greater emphasis is being placed on contemporary civilizations than characterizes conventional schools, on greater continuity of pupils' experiences, rapid integration of subject fields and better selection of subject-matter, and the stimulation of creative expression on the part of pupils. In methodology, he lists three improvements: pupils are sharing in the planning of their work; they are engaging in investigations, and teachers' efforts are directed to pupils, their interests and needs, rather than to the subjects which pupils are expected to learn.

EVALUATION OF PUPILS AND INSTITUTIONS

The effort to discover elements of pupil attitudes and growth that may be measured has received definite reinforcement by the experiment noted in the preceding paragraph. The work of the Education Records Bureau of New York City, of the Educational Research Bureau at Ohio State University, of the Guid-

²⁴ Note on Program of Franklin and McKinley High School, Cedar Rapids, Iowa. Educational News and Editorial Comment. *The School Review*, Oct. 1936.

²⁵ T. M. Blackwell. *The School Executive*. June 1936.

²⁶ Educational News and Editorial Comment. *The School Review*, Oct. 1936.

²⁷ C. L. Baron and A. F. Graef. Devices for Teaching English to Low I.Q.'s. High Points in the Work of the High Schools of N. Y. C. Sept. 1936.

²⁸ J. C. Duff. *So You're Going to Have a Library*. The Junior-Senior High School Clearing House, May 1935.

ance Department of Teachers College, Columbia, and of the staff of the Lincoln School of Teachers College, and of L. L. Thurstone and of H. H. Remmers seems likely to be of very great importance as schools come more generally to seek help in measuring significant changes in the hearts and minds of youths rather than in their memories.

Meantime the question of evaluating the educational institutions themselves as distinguished from the progress or achievements of pupils, is engaging the sustained attention of a committee representing the six regional associations of colleges and secondary schools, known as the "Cooperative Study of Secondary School Standards." There have been five interim reports published so far. Tentative criteria are now being applied to 200 selected schools. No final report will be made by this Commission for some years.

ACADEMIC FREEDOM FOR TEACHERS, PUPILS, AND SCHOOLS

For the past two years or more, the schools have been torn between two opposing influences. On the one side are the challenges for experimentation and adaptation in the light of pupil needs, of changes in community life, of publicized and subsidized adventures, studies, pronouncements, and exhortations. On the other side are the pressures of vocal patriotic, conservative, and political groups which have opposed all liberal, "New Deal," internationalistic, and critical activities—all frequently referred to as "radical doctrines"—in the schools.

Tactful and resourceful administrative officers have generally been able to sail between Scylla and Charybdis largely because the conservative Scyllians may be aggressive supporters of some innovations and radical Charybdisians may have great respect for academic learning. School faculties which have sought and gained interested sponsorships for their constructive programs among all classes and groups of their patrons have usually been unmolested,

though not uncriticized, by the public.²⁹

Nevertheless, the passage of "loyalty oath" laws by 22 state legislatures under pressure from patriotic, conservative, and political bodies, has tended to strike fear into the hearts of many teachers and administrators. The possibility of being charged with disloyalty and having to stand public trial because of statements made in accordance with honest belief compels the cautious teacher to avoid making vigorous statements at all. Public suppressions of teachers' freedom have occurred during 1936 at Corruna and Ann Arbor, Mich., Milford, O., Wisconsin Rapids, Wis., Lock Haven (Pa.) State Teachers College, and Eureka, Calif.

Educators who are sincerely desirous for academic freedom and for pupils' understanding of controversial questions welcome the emergence of powerful forces within the American Legion which stand publicly for intelligent discussion of all nationalistic and economic-political questions within the schools, and which support the constitutional rights of teachers and other members of the community to hold and to express opinions that may not agree with the beliefs of dominant leaders in the community.

Meantime the struggle by non-militaristic educators to prevent the spread of compulsory military training in schools and colleges has continued with mingled successes, failures, and stalemates. At Carbondale, Ill., a popular referendum forced upon the Board of Education by educators and church groups, resulted in the abandonment of the R. O. T. C. unit in the high school. A statewide ref-

²⁹ At Millburn (N. J.) High School, a typical suburban middle-class conservative city, for instance, home-room periods, clubs, social study, English, and other groups, and all-school forums discuss freely the daily news and currents of thought and agitation, despite the New Jersey Loyalty Oath Law. At Charlotte High School, Rochester, N. Y., community service clubs have supported every effort on the part of the teachers to promote civic intelligence among the pupils through impartial consideration of controversial questions.

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erendum on the question of compulsory drill in schools and colleges of Oregon apparently resulted in temporary victory in favor of compulsion by a relatively narrow margin. It is hoped that Congress may be in a mood to enact the Nye-Kvale Amendment to the appropriation for Land-Grant Colleges which would eliminate the compulsory features of military training in these institutions.

EXTRA-SCHOOL EDUCATIONAL OPPORTUNITIES

In the report upon Secondary Education for the year 1935, emphasis was laid upon the developments of youth education by extra-school institutions including the Civilian Conservation Corps, Transient Camps, the National Youth Administration, community agencies, and the rest. With the exception of the Transient Camps, the functions of which have now passed to the N. Y. A., the generally effective educational work of three institutions has

been maintained. The Works Progress Administration in cooperation with state, county, and city educational systems continued its effective work throughout this year. Voluntary organizations, under private subsidies, e.g. boys' clubs, settlement houses, and many publicly supported ventures—recreation centers, juvenile courts, guidance clinics, employment offices, etc.—have generally functioned quietly but effectively.

There remains, however, much to be done in the way of more effective coordination of these agencies. As the depression recedes there is danger that all emergency instruments may be discarded. It would be a great loss if such a liquidation should take place without some earnest effort to make permanent the gains in community education that they have made possible. It is possible that the oriented public high school might come to have a significant part in promoting these desirable readjustments.

COLLEGIATE EDUCATION

BY ROBERT LINCOLN KELLY

DIRECTOR, THE ASSOCIATION OF AMERICAN COLLEGES

The desire for education continues to be the nearly universal passion of the American people. Chancellor Chase of New York University observed in his last annual report: "It is not without significance that youth today seems to have more faith in universities than in any other organized agency for national life."

COLLEGE AND UNIVERSITY ENROLMENT

Dr. Raymond Walters, president of the University of Cincinnati, in his annual report "Statistics of Registration in American Universities and Colleges, 1936" (*School and Society*, New York, Dec. 19, 1936), states: "While all geographical divisions of the country have increases, the largest percentage gains in full-time enrolment for 1936 over 1935 are in the West South Central division, 11.07

per cent; the East North Central division, 8.9 per cent; the Mountain division, 7.18 per cent; the Pacific division, 7.16 per cent; and the West North Central division, 6.2 per cent."

Of the 579 institutions which reported to President Walters in 1935 and 1936, the enrolment in 55 universities under public control has increased 8.7 per cent over that of 1935; in 49 universities under private control, 2.9 per cent; in 365 separate colleges of arts and sciences, 4.4 per cent; in 50 technical schools, 11.3 per cent; in 60 teachers colleges, 2.7 per cent. It appears from a further analysis of the figures that the colleges of liberal arts, both independent and affiliated with universities, have had a slight increase in enrolment while those affiliated with publicly controlled universities have had a slight decrease.

INCOME AND SALARIES

The most serious problems with which college administrators have had to contend during the past few years have been in the field of finance. For several years there was a progressive decrease in income from endowment, donations and tuition. The faculties were the chief sufferers because in the effort to balance budgets it became necessary in many instances to decrease salaries. However, the prevailing decrease amounted during the entire period to about 15%, although in individual instances salaries were reduced as much as 50%. There is evidence that the colleges as a class have touched the financial bottom at last and that their condition is improving, but no assurance can be given that that improvement will be rapid.

According to the financial reports for 1935-36 from 121 privately controlled institutions, the increase in receipts for educational and general and for capital purposes was 4.7 per cent above those for 1933-34. Forty-two publicly controlled colleges and universities reported an increase of 21.1 per cent over the income received in 1933-34 for educational, general and capital purposes. A large part of this increased income, however, was in the form of PWA grants for buildings.

Statistics of higher education for 1933-34, now in press, compiled by the United States Office of Education, show that since 1931-32 student fees have decreased 8.2 per cent, income from endowment 8.8 per cent, from public sources 21.3 per cent, and from private gifts and grants 8.3 per cent. It is estimated that the total income from all types of colleges for 1935-36 will be about 16% short of that of 1929-30.

GIFTS AND ENDOWMENTS

The fact that the Federal Government has assumed responsibility largely for relief and that an increasing number of citizens are disposed to look to the State for emergency and for permanent aid has undoubtedly affected adversely the whole trend of private philanthropy. The confidence and courage of col-

lege administrators, however, may be cited as one of the distinct phenomena of the times. Contrary to the dire warnings of many prophets during 1936, Harvard University received through gifts almost \$6,000,000; the University of Michigan, from one donor, \$5,000,000; Williams College, \$2,400,000; Fish University (conditional), \$1,500,000; Oriental Institute of the University of Chicago, \$2,000,000; Johns Hopkins and Peabody Institute, \$500,000; the American School of Fine Arts, through a will filed, \$1,570,000; Duke University and the Angier B. Duke Memorial, \$1,500,000; Mount Holyoke College, from one donor, \$350,000; and Amherst College, from one donor, \$833,871. Swarthmore has completed its additional \$4,000,000 endowment fund. As one indication of the stability of the colleges, the total endowments held by them now amount to over \$1,500,000,000.

DIFFICULTIES AND OBJECTIVES

The prevailing tendency is to draw the picture of the outlook of the colleges and universities in dark shades. A typical illustration may be cited (Francis R. Aumann, "The Outlook for the Universities" in *Progressive Education*, vol. 13, No. 7, pp. 545-49). The underlying assumption of Professor Aumann's discussion is that in a time of economic unrest and competing social ideology an American university is unable to perform its highest function—the pursuit of truth. Most of the discussion is devoted to well-known legislative stirrings, culminating in, or the result of, widespread red-baiting drives, although it is pointed out that the attacks upon the loyalty and integrity of the university come from the left as well as from the right. Professor Aumann's conclusion of the whole matter is: "In this period of vast uncertainties, disheartening instabilities, and strange dislocations, the outlook for the universities is not encouraging. Viewed from any angle, existing social patterns promise little to assist and much to hinder a successful pursuance of university objectives."

It is probably true that no institu-

tion as a whole does its best work in the midst of such turmoil as characterizes the present time, although a truer picture might contain some lighter shades. At the beginning of the year, in the report of the Executive Secretary of the Association of American Colleges (Robert L. Kelly, "The Integrity of the American College," *A. A. C. Bulletin*, March, 1936), two phases of the university function were quoted approvingly: "When the waters of the world are troubled, the gift of progress may be to shed oil upon them, or produce gyrostatic devices for equilibrium or craft which can make new records of smooth sailing, or a knowledge of weather lore and safe channels and a higher order of navigation." And "When the waters of the world are still and stagnant, green and dead, the gift of progress may be any stick which stirs them, any gas which aerates them, any breeze or tempest which chases over them, any swift motive power which traverses them."

If during a given period there is no unrest, it is the responsibility of the universities, which many of them assume, to stir up the waters. Legislative investigations and enactments have caused some concern in individual institutions as have also the winds and waves of economic unrest and competing social ideology, but universities will scarcely be content to admit their helplessness in the midst of economic unrest and competing social ideology or the moods of government officials, state and Federal.

There must be times of housecleaning in any well-regulated menage and such periods of evaluation of educational programs as characterize the present certainly rank as high as do periods of forging forward to uncertain objectives. Administrators and faculties this year, therefore, have been engaged to a considerable extent in clarifying their own objectives, adjusting more successfully their programs to those objectives, and setting up continuing processes of inspection and criticism.

"EXPERIMENTATION"

The process of "experimentation" has brought into view in a striking way the almost infinite diversity of combinations and permutations which may be involved in college program making. Instead of this being a weakness of American education, it is, potentially at least, an element of the greatest strength. The movement is away from standard patterns and in the direction of diversity, of flexibility, of institutional adaptation to discovered educational needs.

By virtue of the process, one college announces this year that it is a textless college, without examinations, required courses, "marks" or conventional tests while another one, at the heart of a great university, defends the wisdom of its two-year program in rigidly stated fields with underlying syllabi and allows any student at any time to take an examination for graduation. One college has banished the faculty lecturer and has substituted the two-hour conference plan, a glorified form of supervised study, while others more and more are buttressing their work with advisers, preceptors, and tutors and are developing a more refined form of the lecture method. The tutoring and lecturing procedures are supplementary. Colleges generally demand prolonged residence on the part of the students, while an increasing number not only encourage student migration but arrange for extensive tours of investigation and study in our own and foreign lands. Some, otherwise progressive institutions, hold to the necessity of "imparting" or "transmitting" knowledge and truth, while others are committed to the "quest of truth" individually and cooperatively as their educational touchstone. Some persist in the assertion that their object is "to train the intellect," while others acknowledge their obligation to "the whole boy,"—scholarship, health, character, conduct, manners. Some are perfecting their systems of selective admission—among them the medical colleges—while others, chiefly tax-supported institutions, are introducing the "general college" in addition to

the existing liberal college to attract and serve more students, chiefly with narrower horizons.

THE WORK OF CONSOLIDATION

But more significant than this diversity of method, instances of which might be multiplied indefinitely, is the work of consolidation of ground already won and of intensive educational processes resulting in superior quality of performance. In general it is the privately controlled institutions which are chiefly concerned both with "experimentation" and with quality performance. Coincident with this more marked division of interest is the attainment of preponderant enrolment in the tax-controlled institutions which now for the second time in American educational history exceeds that in the institutions privately controlled.

In the sense of combining institutions and consolidating them into state systems for purposes of greater administrative effectiveness, the tax-controlled institutions are more successful. Such state systems, here and there throughout the country, are being subjected to detailed improvement. A similar combination of privately controlled institutions is in process of development in and about Atlanta. Progress is being made also in the older program of consolidation at the Claremont Colleges, California.

For the most part the consolidations here reported are within individual institutions. In these, for the first time, the machinery of admissions, which often has assumed great complexity, is being scrapped in so far as it affects the large number of students who this year entered college from 30 secondary schools banded together in the "Eight Year Plan" under the auspices of the Progressive Education Association for developing special programs of college preparation. These students enter the colleges upon the recommendation of their respective schools. With these students the alleged "domination of the secondary school by the college" has little or no meaning.

The group of colleges which has encouraged students to study for honors report increasingly favorable results. Not only is the number of students being admitted to honors work larger from year to year, but the students are working with greater earnestness and to greater purpose. Some of their work is within the field of research.

CURRICULA REVISION

A large percentage of the colleges are reorganizing their curricula in terms of simpler and more workable programs. Phases of their programs once considered valuable are, under the stress of experience particularly during years of depression, being abandoned. There may be mentioned the large array of "preprofessional courses" which are not sources of unusual satisfaction either to the undergraduate colleges or the professional schools.

Then, there is the divisional reorganization of the curriculum, which is assuming very definite trends. Large numbers of colleges are adopting the "perpendicular" divisional system with the result that departmental lines are slowly vanishing, along with complex departmental machinery and ever-present competition, and with a more vital arrangement of subject matter under intelligent and sympathetic guidance there is eventuating a synthetic rather than a specialized and analytic educational procedure. This emphasis upon human values instead of subject matter is one of the fundamental improvements of our day. Coupled usually with this divisional arrangement and also with the honors system is some form of comprehensive examinations. These examinations, with all that they involve, constitute the most effective implement recently introduced into the teaching process. They contribute motivation to the student and stimulate initiative, self-direction, clear-thinking. Not so many colleges are recognizing the validity of the "horizontal" division, i.e. the upper-lower or the junior-senior division. In relatively few has this type of division become organic.

THE COLLEGE OUTREACH

These re-evaluations of college work, however, have a profounder meaning than retrenchment as such. Marked progress is being made in the introduction of the fine arts, including music and the drama, into the liberal college program; in the development of personnel work including tests and measurements; in the establishment of helpful relationships between the colleges and the alumni; in plans to provide richer opportunities for preparation for the various forms of public service; while beginnings are being made in educational opportunities in preparation for marriage. This does not mean that a mad scramble is now imminent for the introduction of vast quantities of new material into the curriculum offerings with the resultant crowding out of presently accepted material. It does mean that the process of selection by the institution, and from wider areas of interest, will continue as the objectives are more clearly defined and rigorously administered.

UNIVERSITY ORGANIZATION

Nor are these searchings for a better way of life confined to the colleges; the same "divine discontent" reaches into the entire problem of university organization. Never before perhaps has there been so much discussion of the question, What is a university? The Tercentennial celebration at Harvard brought a multitude of university men from foreign lands, each with his constructive message. President Conant declared, regarding university objectives: "The ultimate sources of strength are, first, the cultivation of learning for its own sake; second, the general educational stream of the liberal arts; third, the educational stream that makes possible the professions, and last, the never-failing stream of student life, carrying all the power that comes from the gregarious impulses of human beings. . . . If one of these four vital streams I have mentioned either fails or swells to a torrent, thus destroying the proper balance of nourishment, then the true university tradition may perish."

The book of President Hutchins of the University of Chicago, *The Higher Learning in America*, and the book also published this year, *The Retreat from Reason*, by Lancelot Hogben, an English critic, added fuel to the flames of debate. Of these two books John Dewey says: "Mr. Hutchins looks to Plato, Aristotle, and St. Thomas Aquinas in order to discover the nature of Reason and its modes of operation; Mr. Hogben looks to the activities of experimental science as the place in which to discover its real nature. President Hutchins feels strongly that the invasion of vocationalism is the great curse of contemporary education. Higher education is to be purified and reformed by complete separation of general and 'liberalizing' education from professional and technical education."

THE LIBERALIZING OF PROFESSIONAL EDUCATION

Medical.—On the other hand, there is no more impressive trend in higher education than that which may be termed the liberalizing of professional education. For several years medical education has been taking the lead within the professional schools in this development by emphasizing preliminary college work for admission and including liberalizing work in the medical program. At the Annual Meeting of the Association of American Medical Colleges the section of the constitution devoted to the curriculum was amended to read: "The main purpose of the undergraduate curriculum should be to provide the student with a sound foundation in the fundamentals of medicine on which he can build in the future in general or special practice and in scientific investigation. He should have acquired such habits of mind and thought that in addition to profiting by his professional experience, he will continue to educate himself throughout his life."

The Executive Secretary of the Association makes the claim concerning this forward step: "It liberalizes the curriculum; removes virtually the last vestige of regimentation; gives

every medical college academic freedom in teaching, yet lays down fundamentals which are important and which must be conserved. I feel that the curriculum is now on a wholesome educational basis."

A survey of medical schools has been completed and the stimulating effects of it are apparent. The medical schools have adopted selective admissions requirements which give to present applicants a one-to-two chance of entrance. During 1936 there has been an exchange of speakers at the Annual Meetings of the Association of American Colleges and the Association of American Medical Colleges and other cooperative procedures have been established. While, of course, state laws must be enforced, the demand is increasing for general rather than "pre-medical" courses in science as a part of the undergraduate course of study.

Engineering education has been moving for several years in the same direction. The slogan, *Engineering, A Career and A Culture*, was adopted some years ago. Engineering claims recognition as one of the fine arts. This year the Society for the Promotion of Engineering Education provided for the holding of more than a score of conferences to be devoted to comprehensive examinations and other methods of attaining superior educational values. Some of the engineering schools are moving toward graduate work.

An unusual opportunity occurred this year for the engineering schools to declare their educational faith and practice. In the midst of the presidential campaign, Mr. Roosevelt issued this challenge through the press to the executives of 100 schools and colleges of engineering: "Events of recent years have brought into clearer perspective the social responsibility of engineering. . . . This raises the question whether the curricula of engineering schools are so balanced as to give coming generations of engineers the vision and flexible technical capacity necessary to meet the full range of engineering responsibility."

There was an immediate response

by the same route. The presidents of Lehigh, Stevens, Polytechnic Institute of Brooklyn, Massachusetts Institute of Technology, and the Dean of the Engineering School of Purdue University set forth the liberalizing phases of the engineering programs in English, history, literature, economics, government, psychology, philosophy, ethics, music, art, and business law. It was pointed out that at Purdue University, for example, about half of the engineering student's time is devoted to broad and liberalizing studies. President Potter advised that the American Engineering Council has considered President Roosevelt's letter and authorized the announcement: "The American Engineering Council has acted for a period of more than fifteen years as an instrument of inquiry into social and economic problems as affected by technology, and the engineering educators of the country are fully appreciative of the responsibility of the engineer in bringing about a better balance between technological progress and social control. Engineering programs of study are endeavoring to enhance the services of the engineer to the public by more thorough scientific and technological preparation and by special attention to studies which stress social trends, economic problems, and good government."

Teaching.—The situation with reference to the education of teachers is very chaotic. Certain trends may be pointed out. The teachers colleges are moving toward liberal as well as technical offerings on an undergraduate basis. Some of the liberal colleges are recognizing that the effort to comply with legal requirements for the training of teachers in some of the States vitiates the liberal program and they are moving in the direction of a fifth year for the professional study of education. Institutions which have already adopted this plan are Brown, Clark, Harvard, Lawrence, Mount Holyoke, Radcliffe, and the University of Pennsylvania. There is a growing demand that the education of teachers for secondary and advanced positions be put on a

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graduate basis as it is now in some of the teachers colleges in universities and as is required by law in California.

Dean William T. Russell, near the close of the year, proposed the establishment of a national commission to evolve a "Charter for Teacher Education." He said: "The commission should have such competence and distinction as to be able to influence the authorities of the several states and stir the ambitions of our people."

THE VOLUNTARY ASSOCIATIONS

Plans.—The colleges are receiving invaluable assistance from the long-term plans of the voluntary associations as well as from the United States Office of Education. These plans or projects are usually made possible through grants from the educational foundations. This represents a type of sound educational development which is not paralleled in any other country.

The American Council on Education.—The financial advisory service offers advice in financial reports, the depreciation of real property and current investment practices. The educational motion picture project makes lists of films for educational purposes and cooperates with various other agencies. The measurement and guidance service has furnished examinations in 600 institutions, and now offers its services as a coordinating agent in many areas of testing. It holds an annual meeting in New York. It is entering upon plans for regional cooperation, post-doctoral fellowships, collegiate training in business, an investigation of the master's degree, professional standards, educational administration, an encyclopedia of educational research, the adjustment of youth both in and out of school. The Council publishes *The Educational Record* and *American Universities and Colleges*.

The American Association of Junior Colleges.—The junior colleges are engaged in significant experiments in their libraries, in curriculum building, and in the extension of their services to the communities of which they are a part. The Asso-

ciation publishes *The Junior College Journal*.

The American Association of University Professors.—This Association serves college professors when alleged cases of violation of academic freedom and academic tenure are reported. For the past three years it has worked in conjunction with the Commission on Academic Freedom and Academic Tenure of the Association of American Colleges. In 1936 an important report was made on the effect of depression and recovery on higher education. It maintains chapters at many colleges throughout the country, and publishes a *Bulletin*.

The American Association of University Women functions through a national headquarters staff and 730 branches, the members of which are alumnae of approved American colleges and universities. Its program in the field of higher education is concerned with the establishing and maintaining of standards in education, encouragement of women in the field of creative scholarship through graduate fellowships, and a research service in collegiate education. It publishes a quarterly journal and such results of special investigations as those for 1936, "Significant Trends and Developments in Higher Education for the Last Five Years," and "Newer Aspects of Collegiate Education."

The Association of American Colleges, which enrolls in its membership almost 500 of the leading colleges of liberal arts and sciences, including those in the universities, concerns itself with every possible phase of administration and teaching in those colleges. It maintains an extensive counseling service both in the headquarters office and in the field with special features in the areas of college architecture and the fine arts, including music and the drama, and college financing, including the cost of college education, the advancement of endowment and current funds, and state and Federal legislation pertaining to taxation. In the field of music it developed in 1936 the Concert Project which furnishes

to colleges at greatly reduced cost the services of artists of high standing, the emphasis of whose performance is on the educational rather than the entertainment phase of musical rendition. It is developing a plan by which these artists will remain on the college campus one or two days, after the concert is given, for informal contacts and counseling. The Association is also developing a circulating library of choral music and a plan of grants-in-aid to teachers of college music. It also has in process of development a special project devoted to the coordination of library administration and the educational program of the college. It has almost completed a survey of college faculties and a third book on comprehensive examinations which deals especially with the field of the humanities. The Association is conducting studies in the meaning of concentration, education for home-building and education for public service. It works in cooperation with the various other associations listed in these pages, including those devoted to the liberalization of professional trends. It is preparing an audit of experience as a resumé of its 23 years of service to the American college. It conducts regional conferences throughout the country in which college officers and faculty members participate. During 1936 four such conferences were held: on the Pacific Coast, in the Rocky Mountain region, in the South, and in the North Central area. It publishes a bulletin with a wide scope of interests, and many books and reports dealing with the problems of liberal education.

The Association of Land-Grant Colleges and Universities, before the Federal Government began to operate in the field of social security, made a study of the retirement plans and group insurance among its members. This study shows that with few exceptions the land-grant colleges have some form of retirement plan and the Association is contributing to the further development of these plans. It publishes *Annual Proceedings*.

The Institute of International Education operates within the area of international exchanges of professors and students. It is now giving especial attention to visiting foreign professors in the United States. It develops fellowships and scholarships which are open to foreign students for study in the United States, particularly from European and Pan-American countries, and conducts a cooperative lecture plan within the American colleges. The American University Union represents the Institute in London and Paris. The Institute also publishes a bulletin.

STANDARDIZING AGENCIES

Various standardizing agencies, notably the Association of American Universities which operates nationally, and the regional associations—the North Central Association of Colleges and Secondary Schools, the Southern Association of Colleges and Secondary Schools, the Middle States Association of Colleges and Secondary Schools, the Northwest Association of Secondary and Higher Schools, and the New England Association of Colleges and Secondary Schools—have contributed for years to the acquiring of minimum objective standards for purposes of accreditation. These standards have been within the fields of all types of educational institutions. Within recent years the North Central Association has devoted itself to a thorough study of results of these standardizing processes and is now substituting an entirely new system of accreditation based upon sounder educational procedures. The complicated plan now being adopted, which substitutes principles and ideals for standards, is fully set forth in "Principles of Accrediting Higher Institutions" (George F. Zook and M. E. Haggerty, *Principles of Accrediting Higher Institutions*, University of Chicago Press, July, 1936). Thus the motive power of American higher education is being maintained and developed within the institutions themselves and their own associations and agencies.

EDUCATION FOR THE PROFESSIONS

EDUCATION FOR THE PROFESSIONS*

BY ALONZO F. MYERS

PROFESSOR, NEW YORK UNIVERSITY

MEDICAL EDUCATION

School Classification.—Medical education affords an excellent illustration of how an unofficial voluntary agency can exert a powerful influence in behalf of high standards of professional training. Since 1907, the American Medical Association, through its Council on Medical Education and Hospitals, has classified medical schools on the basis of personnel, equipment, administration, and the standing of graduates in the various state licensing examinations. Although its findings have, of themselves, no legal authority, many States have enacted statutes accepting the Council's ratings of medical schools as the basis for determining the eligibility of applicants for admission to the licensing examinations.

Public interest in medical education was aroused by the publication in 1910 of a report prepared for the Carnegie Foundation for the Advancement of Teaching by Abraham Flexner. The elimination of the unfit decreased student enrollment and the number of medical schools, but since the war there has been a steady increase in the number of applicants seeking admission to medical schools. During the last five years, hundreds of those who found themselves unable to matriculate in medicine in the United States or Canada have migrated to European institutions.

Recently, the Council has undertaken a comprehensive resurvey of medical education and during the years 1934 to 1936 all of the schools north of the Rio Grande have been revisited. The Council, with headquarters at 535 North Dearborn Street, Chicago, consists of Dr. Ray

Lyman Wilbur, Chairman, Stanford University; Dr. Charles E. Humiston, Chicago; Dr. Frederic A. Washburn, Boston; Dr. J. H. Musser, New Orleans; Dr. Fred Moore, Des Moines, Iowa; Dr. Reginald Fitz, Boston; and Dr. Fred W. Rankin, Lexington, Kentucky.

Approved Institutions.—The Council on Medical Education and Hospitals of the American Medical Association issues five lists of approved institutions:

1. **Medical Schools:** Prior to 1907 prospective medical students had no means of knowing the character of the institutions which they intended to enter. In that year, the Council published its first classification of medical schools which were listed as A, B or C. In 1928 there were no longer any schools rated as B and the Council discontinued further listing of those which had been C, so that at the present time only the Class A schools are recognized or approved. Most of the state boards follow the lead of the Council and admit to the licensing examination only those who are graduates of approved schools.

2. **Hospitals Approved for the Training of Interns:** Inspection of hospitals has enabled the Council to list 705 hospitals which provide internships for 6,759 graduates.

3. **Hospitals Approved for Residencies in Specialties:** Likewise, by inspection, the Council has been enabled to list 410 hospitals which provide 2,840 residencies in the specialties.

4. **Hospitals Registered as Reputable:** This list is printed in the *Journal of the American Medical Association* annually and the *American Medical Directory*.

5. **Approved Colleges of Arts and Sciences and Junior Colleges:** For the guidance of prospective medical students and admitting officers, the Council publishes annually a compila-

*Acknowledgment is made for valuable contributions and assistance in the preparation of this article to the following persons: Paul Titus, M.D.; William D. Cutter, M.D.; Will Shafer; James E. Cummings; Dr. Lewis J. Sherrill; Dean A. Wellington Taylor; Professor Herbert A. Tonne; Dr. Charles W. Hunt.

tion of colleges of arts and sciences approved by the following agencies: Association of American Universities, Middle States Association of Colleges and Secondary Schools, New England Association of Colleges and Secondary Schools, North Central Association of Colleges and Secondary Schools, Northwest Association of Secondary and Higher Schools, and Southern Association of Colleges and Secondary Schools. Special issues of the *Journal of the American Medical Association* containing approved lists, statistics and current information regarding medical schools, medical licensure, and hospitals appear each year.

The Advisory Board for Medical Specialties.—Hospital authorities throughout the United States and Canada are displaying a steadily growing interest in the activities of the certifying Boards now functioning in the various specialties. These Boards, now 11 in number, are conducting examinations at frequent intervals for the purpose of determining the qualifications of candidates desiring to be formally recognized and certified as specialists. A list of the Boards is as follows: The American Board of Ophthalmology, The American Board of Otolaryngology, The American Board of Obstetrics and Gynecology, The American Board of Dermatology and Syphilology, The American Board of Pediatrics, The American Board of Psychiatry and Neurology, the American Board of Radiology, The American Board of Orthopaedic Surgery, The American Board of Urology, The American Board of Internal Medicine, The American Board of Pathology.

An American Board of Surgery is now in the process of organization. Each of these Boards is officially sponsored by the national societies in its respective specialty, as well as by the given Section of the American Medical Association. In 1933, these Boards, together with representatives from the Association of American Medical Colleges, the American Hospital Association, the Federation of State Medical Boards

of the U. S. A., and the National Board of Medical Examiners, organized a coordinating board because of their many common interests in the improvements of standards of medical practice. This Advisory Board for Medical Specialties, under the presidency of Dr. Louis B. Wilson of Rochester, Minnesota, is reportable to and functions closely under the Council on Medical Education and Hospitals of the American Medical Association. It has been generously aided by grants from the Josiah Macy, Jr. Foundation of New York. Its aims are to establish and maintain uniform educational standards among the specialty Boards, and simultaneously to foster, encourage, and to a certain extent direct the establishment of graduate training facilities throughout this country.

Article Two of the Constitution states: "This Board shall act in an advisory capacity to such organizations as may seek its advice concerning the coordination of the education and certification of medical specialists." Specifically, this represents an official effort to advance the standards and improve the methods of graduate education and training in the medical specialties, with certification of men thus educated and trained who qualify as specialists in the various branches. The common interest of the member organizations in these purposes is obvious. It is equally apparent that some fixed definition of specialties needed to be established, preferably on a graduate educational basis, that minimum standards of organization and conduct for new examining Boards should be fixed and that some official method of recognition be developed.

Meetings of the Advisory Board for Medical Specialties are held annually at the time and place of the American Medical Association meetings, while its Executive Committee meets yearly in Chicago at the time of the Congress on Medical Education.

Activities of the Special Boards.

—Preparations for providing medical school and hospital facilities for the

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required graduate training are going forward actively; surveys of existing facilities for assistant residencies and residencies are being made at the present time in the several specialties; previous activities in the various States respecting the issuance of licenses to specialists are being discussed with a view to their being coordinated with the present activities of the several specialty Boards.

Some of the results of the work will be seen from the recent action of the American Hospital Association which officially recommends to its constituent hospitals (1) that there be prepared and made available to hospitals explanatory literature concerning the objects and purposes of the Advisory Board for Medical Specialties; (2) that all hospitals and departmentalized medical services be requested to give serious consideration to the advisability of requiring future appointees to the chieftainship of specialty services (and to such other appointments as may be considered advisable) to hold the certificate of that particular specialty board; (3) that such hospitals be asked to consider, when appointing young doctors to junior staff positions, whether or not their earlier post-graduate preparation has been such as to render them eligible after due experience to apply for examination by one of the specialty boards; (4) that those hospitals offering residencies in the different specialties have the length of service and character of work to fulfill the requirements of the Advisory Board for Medical Specialties.

LEGAL EDUCATION

Recent Changes.—It is a hopeful sign that the number of law schools has slightly diminished this year. Five schools¹ have closed their doors and two branch schools² have been discontinued, while only one new

school³ has been started. Student enrollment, however, has continued on the up-grade since the year 1932, and in the fall of 1936 amounted to 41,920, an increase of about 4 per cent over the preceding year. It is interesting to note that 60 per cent of the entire net gain occurred in schools located in Washington, D. C., and Baltimore. The increase at schools on the 1934 approved list of the American Bar Association was less than at unapproved schools, the percentage of growth being three per cent in the former case and five per cent in the latter. A further substantial gain may be expected next year as the second-year class will assuredly be much larger than that now in school.

In the present *Annual Review*, 195 law schools are listed. Eighty-eight of these are approved by the American Bar Association, three having been added to the list during the last year (Loyola University School of Law at Los Angeles, The Law School of the University of San Francisco, and Wake Forest College of Law). Eighty-one of this number are members of the Association of American Law Schools, including Temple University School of Law and Wake Forest College of Law which were elected at the annual meeting of the Association last December. The number of full-time schools listed is 84, the number of "mixed" schools, giving both full-time and part-time instruction, is 32, and the number of part-time schools is 79. This compares with 83 full-time schools, 26 "mixed" schools and 90 part-time schools which were included in the *Review* published last year by the Carnegie Foundation. The difference between the total of 195 in 1936 and that of 199 in 1935 is not wholly accounted for by old schools which were closed and new ones which were opened. It is due also to the fact that five schools⁴ in existence in 1935

³ Mount Vernon School of Law, Baltimore, Maryland.

⁴ Robert H. Terrell Law School (colored), Washington, D. C.; Webster University Law School, Atlanta, Ga.; Vorhees Law School, Terre Haute, Indiana; Asheville Law School, Asheville, N. C.; Longview Night Law School, Longview, Texas.

¹ Miami College of Law, Miami, Florida; Union College of Law, Chicago, Illinois; University of Dayton College of Law, Dayton, Ohio; Lebanon College of Law, Lebanon, Tennessee; Texas College of Law, Houston, Texas.

² Huntsville Branch of Houston Law School and Brownsville Branch of the Rio Grande Valley School of Law (Texas).

were not listed by Mr. Reed in the Carnegie Foundation publication, but have been included in 1936 when information concerning them was obtained. On the other hand, one school⁶ listed by Mr. Reed was found to have less than ten students and was therefore dropped from the list this year, and two other schools⁹ were omitted concerning which adequate information was not available.

While the number of schools demanding a degree for admission in all cases has remained at five,⁷ the number increasing their requirements from two to three years of college has been augmented by two schools, the University of Kansas School of Law and Marquette University Law School, while one, The Lamar School of Law of Emory University, has gone back from three years to two, with a resulting net gain in this class of one. There is now a total of 27 schools⁸ requiring as a minimum for entrance three years of college. The Indiana Law School, the South Bend University Law School of South Bend, Ind., the Benton College of Law in St. Louis, and the Y.M.C.A. St. Joseph Law School of St. Joseph, Mo., a total of four schools, have increased their requirements to a minimum of two years of college, making a total of 98 with that requirement as compared with 56 demanding only high school graduation or less.

It is also interesting to note that there are now only 8 schools giving less than a three-year course. Seven of these give a two-year course and one of them a one-year course.

Two schools⁹ formerly classed as

⁵ Wilmington Law School, Wilmington, N. C.

⁶ Southern Law School, Athens, Georgia, and Winder Law School, Winder, Georgia.

⁷ University of California, Yale, Harvard, University of Pennsylvania and University of Pittsburgh.

⁸ University of Southern California, Stanford, University of Santa Clara, U. of Colorado, Catholic U. of America, U. of Denver, U. of Florida, U. of Illinois, Northwestern, Notre Dame, U. of Iowa, U. of Kansas, Washburn, U. of Michigan, Cornell, Columbia, Syracuse, U. of North Carolina, Duke, Western Reserve, U. of Oklahoma, Dickinson, William and Mary, U. of Washington, West Virginia U., U. of Wisconsin, Marquette.

⁹ Central Law School, Louisville, Ky., and Willamette University College of Law, Salem, Ore.

part-time are now designated by the symbol "M" and six schools,¹⁰ formerly recorded as only part-time, now are in the class of "mixed" since they have a morning as well as an afternoon or evening division or both. A minor change has been made where eight schools not previously so designated have indicated that the period between matriculation and graduation can be shortened by attendance at the local summer session.

Tuition fees remained about the same in 1935 as in 1934. In a few rare cases small increases have been made. Apparently this will be a more common phenomenon in 1936 than it has been in 1935.

Progress in Adoption of A.B.A. Standards.—For the past 15 years the problem of how to secure the best qualified lawyers has had much attention from the American Bar Association. Standards adopted in 1921 on the recommendation of a committee headed by Elihu Root have been advocated with vigor and earnestness and have been approved by the great majority of state bar associations of this country. The result has been a gradual tightening of the entrance requirements. Two years of college education or its equivalent before the commencement of law study was the recommendation of the Root committee. At the time that recommendation was adopted, Kansas was the only State in the Union to have such a requirement. Today we see it effective either presently or prospectively in 30 States, including the great industrial commonwealths of New York, New Jersey, Pennsylvania, Massachusetts, Ohio and Illinois, some States along the northeastern seaboard, many States of the north central and northwestern part of the United States, almost the entire Rocky Mountain region, and three States of the south, including in all more than two-thirds of the lawyers

¹⁰ Lincoln University, San Francisco; The Hartford College of Law; Chicago-Kent College of Law; Abraham Lincoln University, Indiana; Portia Law School, and Suffolk Law School, Mass.

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of this country. Within the past two years the rapidity of the movement has increased, 11 States having adopted the two-year college requirement since Jan. 1, 1934, and Kansas having gone to a preliminary requirement of three years of college work.

Technical Training.—In the field of technical training, the American Bar Association standards require the successful completion of a three-year full-time or four-year part-time law school course yielding a degree from a school on the Association's approved list. On this point the results have been far less satisfactory, as measured by the adoption by the States of the whole of these standards. The wisdom of time and quality requirements needs no elaboration here. A man with two years of general college education but whose law training has been obtained in an office or at a poor law school fails to meet the requirements on which the public is entitled to insist for its own protection. As a minimum the applicant should have succeeded in mastering the professional course at a school which itself meets the minimum requirements. The reasonableness of this view has not overcome the tradition of the catch-as-catch-can training of the law offices of a former generation. Though 40 States require a minimum of three years of legal training, all but five of these still permit and recognize office study.

Only one State, New Mexico, and one Territory, Hawaii, have adopted the American Bar requirements in full. Four other States, West Virginia, Alabama, Ohio and Oregon, approach complete compliance by demanding a minimum of three years of law school study and requiring that it be pursued in an approved law school, except in the case of Alabama which allows but penalizes study in an unapproved school. Some encouragement may be had from the progress which is lately being made in this direction, as illustrated by the fact that the present rules for admission in all of the six jurisdictions last mentioned, except

West Virginia, have been adopted within the last three and a half years.

ENGINEERING EDUCATION

Engineers' Council for Professional Development.—The Engineers' Council for Professional Development was organized in 1932 for the express purpose of improving the status of the engineering profession. To this end the Council has inaugurated a program dealing with the selection, guidance, training and certification of the members of the profession. This program is being carried out under the direction of four operating committees. One of these, the Committee on Engineering Schools, is expected, as part of its broad purpose of assisting in the enhancement of the status of engineering education "to formulate criteria for colleges of engineering, which will insure to their graduates a sound educational background for practicing the engineering profession." A specific duty assigned to the committee is the inspection of engineering colleges with a view to the accrediting of curricula offered by them.

Accrediting Programs.—After a thorough study of accrediting methods of other agencies the committee formulated a statement of principles and a procedure in accordance with which its program would be carried out. This program was inaugurated in November, 1935. Since then the first stage of the work has been virtually completed and was reported upon by the committee to the annual meeting of E.C.P.D., held on Oct. 6, 1936.

The accrediting program is being conducted under authorization to function as the agency of the several groups constituting E.C.P.D.: American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, American Institute of Electrical Engineers, American Institute of Chemical Engineers, the Society for the Promotion of Engineering Education, and the National Council of

State Boards of Engineering Examiners.

Basis for Accrediting.—The statement of principles in accordance with which recommendations as to accrediting are prepared is as follows:

1. Purposes of accrediting shall be to identify those institutions which offer professional curricula in engineering worthy of recognition as such.

2. Accrediting shall apply only to those curricula which lead to degrees.

3. Both undergraduate and graduate curricula shall be accredited. (Accrediting of graduate curricula deferred until a later date.)

4. Curricula in each institution shall be accredited individually. For this purpose, E.C.P.D. will recognize the six major curricula—Chemical, Civil, Electrical, Mechanical, Metallurgical, and Mining Engineering—represented in its own organization, and such other curricula as are warranted by the educational and industrial conditions pertaining to them.

5. Curricula shall be accredited on the basis of both qualitative and quantitative criteria.

6. Qualitative criteria shall be evaluated through visits of inspection by a committee or committees of qualified individuals representing E.C.P.D.

7. Quantitative criteria shall be evaluated through data secured from catalogues and other publications, and from questionnaires.

8. Qualitative criteria shall include the following:

I. Qualifications, experience, intellectual interests, attainments and professional productivity of members of the faculty.

II. Standards and quality of instruction.

a. In the engineering departments.

b. In the scientific and other cooperating departments in which engineering students receive instruction.

III. Scholastic work of students.

IV. Records of graduates both in graduate study and in practice.

V. Attitude and policy of admin-

istration towards its engineering division and toward teaching, research and scholarly production.

9. Quantitative criteria shall include the following:

I. Auspices, control and organization of the institution and of the engineering division.

II. Curricula offered and degrees conferred.

III. Age of the institution and of the individual curricula.

IV. Basis of and requirements for admission of students.

V. Number of students enrolled.

a. In the engineering college or division as a whole.

b. In the individual curricula.

VI. Graduation requirements.

VII. Teaching staff and teaching loads.

VIII. Physical facilities. The educational plant devoted to engineering education.

IX. Finances: investments, expenditures, sources of income.

The purpose of E.C.P.D. is to substitute a single accrediting for the uncoordinated methods that have been used in the past. E.C.P.D., representing the national engineering societies, the state licensing boards, and the colleges of engineering, is the only agency that can accredit colleges under properly inclusive auspices. As a not unimportant incidental advantage, accrediting by this one agency will avoid the needless duplications of present procedures.

E.C.P.D. is merely authorized by its constituent organizations to publish a list of accredited colleges for use by those agencies which require such a list. It has no authority to impose any restrictions or standardizations upon engineering colleges, nor does it desire to do so. On the contrary, it aims to preserve the independence of action of individual institutions and to promote the general advancement of engineering education thereby.

Accrediting of curricula offered by institutions will be upon invitation of the institution. Final decision as to accrediting of each institution

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rests with the Engineers' Council for Professional Development which will pass upon the recommendations made to it by the Committee on Engineering Schools.

Personnel of Membership Committee.—The membership of the E.C.P.D. Committee on Engineering Schools comprises the following: Karl T. Compton, Massachusetts Institute of Technology, chairman, representing the American Institute of Electrical Engineers; H. P. Hammond, Polytechnic Institute of Brooklyn, vice chairman, representing the Society for the Promotion of Engineering Education; G. M. Butler, University of Arizona, representing the American Institute of Mining and Metallurgical Engineers; Ivan C. Crawford, University of Idaho, representing the American Society of Civil Engineers; Harry A. Curtis, Tennessee Valley Authority, representing the American Institute of Chemical Engineers; P. H. Daggett, Rutgers University, representing the National Council of State Boards of Engineering Examiners, and A. A. Potter, Purdue University, representing the American Society of Mechanical Engineers.

Graduate Study.—The 1936 meeting of the Society for the Promotion of Engineering Education dealt extensively with problems and issues relating to graduate study in engineering. The purpose of the papers presented at the meeting was to furnish a body of information and opinion relating to this phase of engineering education. Papers were presented on the following subjects: Selection of Subject Matter for Graduate Study, Qualifications of Teachers for Graduate Work, Subsidizing of Graduate Students and Use of Such Students as Instructors, Establishment of Centers of Specialized Research, Graduate Study for Degrees vs. Non-Degree or Service Graduate Study, and Graduate Work in Engineering and Economics.

It is a curious fact that the most rapid growth of graduate work has taken place during a period of great financial stress; while resources have been drastically limited the colleges

have had to meet an insistent demand for expansion of the most expensive portion of their programs. Some of the present problems are due in greater or less degree to this anomalous situation. Others, equally important, are those that would accompany a process of expansion under whatever circumstances it might take place, that would pertain to any normal evolutionary change.

To give point to these remarks one or two of these problems may be stated. A tendency is observed to adopt academic procedures and requirements employed traditionally in the older fields of philosophy and pure science with little question as to their validity in engineering education. To what extent and in what directions should there be courage to pioneer in developing methods adapted to the unique requirements? What selective processes of admission may be developed in order to guard against the danger of dilution of the quality of students pursuing graduate work that might accompany rapidly expanding enrollments? How may the aim of conducting graduate work essentially as self-directed effort with emphasis on the development of ability to do original work be realized in the face of the observed tendency to carry over into graduate programs the conventional methods of instruction employed in undergraduate work? To what extent is it desirable to promote cooperation among institutions with the purpose of aiding in the development of distinctive programs of advanced work and research and thus avoid needless duplication of effort?

The statements of fact and opinion embodied in the papers and report to which reference has been made, while valuable in themselves, cannot provide the solutions to these problems; they can merely aid in the process of rational analysis that should constitute the approach to their solution. Nor is it intended that their appearance should mark a terminal point in the Society's work in this field. It is expected, on the contrary, that the studies of graduate work inaugurated by Dean

Kimball's committee five years ago, and continued by the committee under which the recent survey has been made, shall be carried further. To that end a new committee, under the chairmanship of Dean Agg, has been appointed.

THEOLOGICAL EDUCATION

There are about 200 schools in the United States and Canada in which education for the Protestant ministry is carried on. About half of these are graduate schools, requiring a college education as one of the prerequisites for admission. Among these graduate schools the most significant events of the year 1936 were certain cooperative movements. Hitherto, theological schools have been obliged to act in rather complete independence of one another. This is much less true in Canada than in the United States. In Canada, graduate schools for theological education are colleges within universities, and thus have been able to secure a larger degree of concerted action than has been the case in the United States. Theological schools in the United States have proceeded almost in isolation from one another. This has been due to the nature of the historical development of education in the United States and to the separateness of religious bodies. These conditions have hitherto effectively prevented the kind of cooperative efforts which have characterized other forms of higher education. During 1936, a number of measures were taken which tended to change in many important respects the picture which has been typical of graduate theological education in America. Because of the significance of these measures for the immediate future of the theological education, these are singled out as being the outstanding developments in 1936 within this particular field of higher education.

American Association of Theological Schools.—Since 1918 there has existed an organization of a loose kind known as the Conference of Theological Seminaries and Colleges in the United States and Can-

ada. In 1936, this Conference adopted a new constitution, transforming itself into The American Association of Theological Schools. The structure of the constitution is similar to that which is used in many associations of institutions for higher education. It permits concerted action without binding individual schools, and is calculated to bring about the adoption of common standards of work, and of recognition for work done within member schools. The membership of this Association comprises 72 schools in the United States and Canada, carrying on graduate work in preparation for the ministry and for specialized professions within the ministry.

Accreditation.—Among the provisions of the constitution of this Association is one which authorizes the setting up of a policy of accreditation of theological schools. A Commission on Accrediting has been appointed, consisting of ten members. The Association adopted a basis for accrediting institutions, which on the whole is qualitative rather than quantitative in nature. Among the "standards" adopted the following are perhaps of general interest. An accredited theological school is expected to require for admission to candidacy for its degrees, the degree of A.B. from a college approved by one of the regional accrediting bodies. It is expected to offer a course leading to the degree of B.D. which becomes the standard first degree in theological schools. It is expected that this degree shall represent three years in residence beyond the A.B. degree and that work done toward the first college degree should not be credited toward a seminary degree. It is stated by the Association that "it is undesirable for a seminary that is not an integral part of a university to grant the Ph.D. or the A.M. degree, but it is legitimate for a seminary affiliated with a university to offer a program leading to the Ph.D. or the A.M. degree in cooperation with a university, the degree to be given by the university." Other items in the "standards" as adopted are probably of more lim-

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ited interest, concerning themselves as they do with details of interest chiefly to theological faculties. The basis for accreditation is published in *Bulletin* 11 of the Association for July 1936. The Commission on Accrediting is engaged at present in the details of gathering information regarding schools applying for accreditation. Lists of accredited institutions will be released probably within 1937.

Procedures for Admission.—Theological schools are increasingly developing procedures for selective admission. Policies of this nature have long been used in individual schools, but the work of the Association on this problem appears to be resulting in a spread of the practice and in more discriminating methods of administering it. This is being done in relation to pre-seminary curriculum, entrance standards properly speaking, and personality and aptitudes.

In 1936, a statement on pre-seminary curriculum was adopted by the Association and has been placed in the hands of persons in universities and elsewhere, who are responsible for the guidance of the studies of individuals in advance of entrance upon the provisions. The statement favors the "broadly cultural" type of preparation of pre-theological students in Arts and Sciences, rather than the early professionalization of their studies. The net effect of this type of college curriculum, together with other measures taken by the Association, looks toward the requiring of four years of college and three years of theological school as the minimum preparation for the ministry. The so-called "telescopic plan" will thus be viewed as sub-standard. Statements adopted regarding entrance to standards properly speaking recommend procedures for analysis of academic qualifications of candidates for admission into theological schools.

At the point of personality and aptitudes for the ministry, the task of selective admission presents its greatest difficulties. Forms have been submitted to theological schools for criticism, looking toward the more

effective estimation of personality and aptitudes in persons desiring to enter the ministry. If this or some other method of analysis of personal qualifications can be brought to a reasonable degree of perfection, the effect in theological education may prove to be very significant.

Studies.—A number of studies of an especial interest to persons responsible for theological education have been carried on and have been reported or are still in process. One of these relates to the problem of aid and subsidy to theological students. Different points of view emerge here with increasing clarity. Some are advocating the assumption of full responsibility by the church and by theological schools for the subsidizing of an individual's preparation for the ministry. The analogy of Army and Navy is cited. Others contend that the best character developments are secured only when a major share of responsibility for this type of education is assumed by the student himself. The problem is an old one in theological education and the solution is not yet seen in full. Apparently, the weight of judgment is in favor of requiring students to assume a substantial portion of responsibility for the financial cost.

The development of supervision of learning experiences during theological education continues to receive attention. There is an effort to discover methods suited to the peculiar nature of this type of education. There appears to be less tendency to break up these experiences into clear-cut types such as "field work," "clinical experience," etc., and to merge these in thought at least and as far as possible in practice into a group of experiences all of which shall receive supervision as adequately as can be commanded.

Catholic Seminaries.—In 1924 there were 79 major seminaries preparing students for the priesthood. Twenty-three of these institutions were given over exclusively to the training of secular priests, 45 to the training of candidates of the various religious orders and 11 to the training of students for both fields of

religious work. In 1934 the number of seminaries had increased to 88. Of these institutions, 22 trained candidates only for the secular field, 55 were devoted to preparing students for religious orders and 11 to the training of students for both fields of religious work.

Seminaries may be divided according to the type of control into two classes, the episcopal and the religious. The former are destined for the training of the secular or diocesan clergy; the latter for the training of the clergy of the various religious orders or societies. The episcopal seminary is a school established for the scholastic and spiritual training of candidates for the diocesan clergy. Such a seminary is diocesan, interdiocesan, provincial, or pontifical, according as it is under the control of the bishop of the diocese, of several bishops who send their students, of all the bishops of an ecclesiastical province, or of the Holy See. A seminary which receives students from several provinces or from dioceses in various parts of the country is called a central, or a national seminary.

The seminaries in the United States that train candidates for the diocesan clergy include one pontifical, two central, three provincial, nine diocesan and 18 interdiocesan or regional seminaries. Pontifical College Josephinum, Worthington, O., as its name indicates, is a pontifical seminary whose purpose is to supply: (a) priests for bishops in dioceses which need secular priests; (b) priests who can speak German where such are needed.

The religious order seminaries are usually provincial or national. Mount St. Alphonsus Seminary, Esopus, N. Y., for example, is provincial in the sense that it is intended for the professed students of the Eastern American Province, Congregation of the Most Holy Redeemer. St. Mary's Seminary, Lemont, Ill., is a national seminary directed by Slovene Franciscan Fathers of the Commissariat of the Holy Cross. The students are

trained to work among the Slovene immigrants in the United States.

Of the 88 major seminaries in the United States in 1934, 15 are conducted by diocesan clergy, one by diocesan clergy and a religious order and 72 by religious orders, congregations or societies. Thirty religious congregations and societies are represented in those seminaries conducted by the religious. Fifty-five of these seminaries were given over exclusively to the training of candidates of the various religious orders, 22 to the training of secular or diocesan priests and 11 to the training of students for both fields of religious work.

The length of the curriculum of the diocesan seminary was definitely fixed by the Third Plenary Council of Baltimore: "In all seminaries the course of study shall embrace not fewer than six years, two of which shall be devoted to the study of philosophy and four to that of theology."

An examination of the reports received from the 88 major seminaries in 1934 shows that 55 have departments of philosophy and theology, 19 have only a department of theology and 14 have only a department of philosophy. Of those that have a theology department 61 give the full four-year course, four give a longer course, and nine do not give the complete course. As already explained, the entire course in some cases is not taken in any one seminary. This may be seen from the following examples: "It is the custom of the Passionist Order to have a class of students in each Monastery. The students of St. Joseph Passionist Monastery, Baltimore, Md., in 1933-34 were studying first year theology (dogmatic)." "Saint Mary's Hall, Villanova College, Villanova, Pa., is the House of Philosophical Studies for the Province of Saint Thomas of Villanova of the Augustinian Order in the United States. The graduates make their theological studies at Saint Augustine's Seminary, Washington, D. C." In seminaries that have a department of philosophy 53 give a two-year

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course and 16 give a longer course. The course in theology is then pursued.

In the 88 seminaries reporting in 1934 the instruction staffs included 384 religious and 160 secular clergy in the department of theology and 321 religious and 109 secular priests in the department of philosophy. The former department also included 5 lay teachers and the latter 24 lay teachers. Excluding duplicates the total number of instructors in the major seminaries in 1934 was as follows: Religious order clergy, 644; secular clergy, 227, and lay teachers, 29. The grand total of 900 instructors was slightly larger than in 1932 when 883 instructors were reported.

In 1934 the number of students enrolled in courses in theology was 5,090. Of this total 1,838 were students training for religious orders and 3,252 were students training for the secular clergy. A total of 2,802 students were enrolled in courses of philosophy. This total included 1,477 religious order students and 1,325 aspirants to the secular priesthood. Excluding duplicates the total number of students training for the religious orders was 3,222 and for the secular clergy, 4,578. The grand total of 7,800 students in 1934 was an increase of 73 students over the total of 7,727 in 1932.

In 1934 the major seminaries reported 1,305 graduates. Twenty-seven of the seminaries confer the various academic degrees in addition to the degrees of Bachelor of Theology, Licentiate of Sacred Theology and Doctor of Sacred Theology. The number of each degree listed was as follows: Bachelor of Arts, 374; Master of Arts, 68; Licentiate of Philosophy, 23; Doctor of Philosophy, 2; Bachelor of Divinity, 77; Lector of Sacred Theology, 43; and degrees reported but not designated, 100. The number of graduates ordained as religious was 372 and as secular clergy, 712. This gives a total of 1,084 ordinations in 1934 which was an increase of 73 over the total of 1,011 ordinations in 1932.

BUSINESS EDUCATION

Current Trends.—Perhaps the most striking trend in the United States is the increased use of trained economists not only by the government but by business organizations themselves. The conviction that independent action or what is sometimes generally denoted as *laissez faire* is due for an overhauling and that more consideration must be given to the social consequences of private business has set a great many business organizations to thinking seriously about making better use of those who are trained in economics and in the broader social implications of business conduct.

There has been increased attention devoted to the problems in international relations and international trade as a stabilizing influence in business and as an opportunity for development along certain lines. The tendency over the last few years for the government to participate in increasing measure in private business has caused a rise in interest on the part of students of business in problems such as the government would consider important. Those have to do with fundamental economic considerations, extension of credit more largely from the social point of view than from private gain, problems of private and public competition in the fields of electrical production, and relation of government to business. As a result of the depression more attention has been paid the last few years to cost accounting as a means of determining cost and cheapening if possible the cost of production. There has been a recurrence of interest in investment and it has involved a more intensive study of channels for invested funds. Problems such as low rates of interest, security of investment, the probable future of economic trends that bear on the probable safety and interest of investments, all have called for a more intelligent type of study than merely the study of the balance sheets and income accounts. It has involved wider economic implications. The same thing is true of distribution as is true of cost ac-

counting. There is an increased interest in the study of marketing problems with a view to decreasing cost of marketing products in order to get the price within the range of the consumer. The general improvement in business has stimulated interest in procedure of business all along the line.

In general, then, there has been a widening of the conviction that business is the institution through which economic forces are worked out and that a greater need for coordinating of economics with business practice is apparent. In most cases the student finds it necessary for him to have a certain amount of vocational training in the field of business before he can be associated with a business enterprise, but he realizes that that is not the type of training which will be most useful to him in an executive capacity.

Professional Education for Business.—The continued increase in enrollments has to a considerable degree released the administrations of the collegiate schools of business from focusing their attention on problems of retrenchment, salary cuts, larger classes, and the like. Attention is again being given to the more significant problems of professional education for business. First among these problems is that of standards. The closer relations with business which the collegiate schools of business have maintained have made them far more pragmatic about standards of attainment than most other professional schools. Such questions as, "Is it worth while?" "Does it pay?" "Is it most efficient?" are never far from the thinking of leaders in professional business education. Is mere classroom attendance plus final examinations a satisfactory standard for professional development? There is a growing opposition to this practice. The administrations in the collegiate schools of business are looking with interest upon attempts to overcome this problem at the University of Chicago School of Business and elsewhere. However, they do not feel that the mere substitution of com-

prehensive examinations is entirely satisfactory. Neither are they convinced that cooperative training is a device sufficient in itself for overcoming the admitted defects of instruction limited to the classroom.

Another problem facing the school of business is that of differentiating between graduate work in business and so-called professional training, the distinction being that graduate work is that instruction based upon the background of an academic degree, whereas professional training is undergraduate work, or graduate work based upon undergraduate professional training. What differences in standards can be devised? How can duplication be avoided? What use can be made of academic background? These problems are just now being reconsidered. Their adjustment waits upon the continued improvement of financial status not only in the schools of business but in all university divisions.

In an effort to improve finances several schools of business embarked upon secretarial training as a field of endeavor. The effort to make this type of instruction professional has frankly been wish-fulfillment. Secretarial proficiency is necessarily based upon a sound stenographic foundation. This cannot be classed as professional and therefore it is minimized by many schools of business. These schools have as a group avoided the choice of either giving stenographic training and therefore secretarial training entirely to some other educational institution, or going into the problem whole-heartedly.

Improvement in School Work.—Constant improvement is being made in the work of the schools of business. More attention is being given to the general academic background of the business student. Better techniques for student selection are being used. Improved relations are being achieved between graduate work in business and other types of graduate work. A professional consciousness of the place of the collegiate school of business in American education is being maintained and increased through the work of the

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American Association of Collegiate Schools of Business and various regional and state organizations.

THE EDUCATION OF TEACHERS IN THE UNITED STATES

Objectives.—The most challenging problem which now confronts those engaged in public education and in teacher preparation is an adequate statement of the ends which are necessary if a democracy is to make its largest contribution. The Department of Superintendence is this year making an effort, through its plans and policies committee, to make a statement of these objectives, which will be comparable, though widely different, from the definite objectives now being undertaken by other types of government.

The deficiencies in the education of teachers are generally recognized. Institutions fail to recognize the general objectives of education, being engaged merely in routine. It seems clear that the present attitude of the public will not allow such institutions to continue to spend public funds without changing their program so as to make positive contributions to the general problems of a democracy. This statement indicates the wider conception of the function of the school. The mere accumulation of fact or even the discipline of the mind are included in a much larger responsibility, namely an active participation in understanding and influencing the life of the community.

Problems.—On another score there seems to be in education a lag in making use of the discoveries concerning child growth and learning. In this field, as in other fields of science, scientific progress is greater than can easily be absorbed in practice in the institutions which prepare teachers. Teachers are inadequately informed about the laws and conditions governing child growth. It is becoming clearer that education is an individual process; that only as the capacities of each child are understood and the best means available applied to his particular problem can the full opportunity and responsibility of education be met.

Another problem which is disturbing concerns the quality of those who are attracted to teacher education curricula. Recent studies have shown that the work of teaching is not attracting its share of the more capable graduates of the high schools. Three-fourths of the entering classes of normal schools and teachers colleges are less able, as measured by the tests used, than the median of students entering liberal arts colleges and universities, many of whom are going into fields of work other than teaching. The general statement would not hold good in all localities, for under the system of administration in the United States local areas have widely different policies and some are much farther advanced than others. As a result of this condition, the cultural attainments of teachers, especially in the elementary schools, are often inadequate to result in their largest contribution and their adequate participation in the intellectual and social life of the community.

A further problem is found in the selection and preparation of members of the faculties of teacher education institutions. On the one hand, many members of such faculties have little information about the specific conditions which their students will be obliged to meet in their classrooms. On the other hand, the teachers often lack the scholarship and broad cultural background which will make the largest contribution to the personal development of the teacher. After the teachers are selected they are often overwhelmed with assignments which do not allow them to do a creative and significant piece of leadership and guidance. They are too often found attempting to teach subjects for which they have not had specific preparation. This condition parallels that found in high schools, where assignments are often made without reference to the specific educational background of the teacher.

Defects.—One of the most serious defects from the point of view of the general demand upon teachers at the present time is the lack of informa-

tion and concern about the various agencies that are available for children outside the school. The generally accepted dictum that we must educate the whole child obviously means that all institutions should be coordinated as well as possible in the effort to give each pupil the advantages which he can use to the fullest extent. The school has been too conservative in relating its program to other community agencies. There is a general demand that this be corrected.

The institutions for preparing teachers are being forced by the nature of their problems to discuss them in common, no matter what may have been the historical divisions. The liberal arts college, which has historically supplied the teachers for the secondary school, finds its work paralleling that of the state teachers colleges who have entered this field. The enormous increase in high school attendance has made the high school the common school. The teachers colleges, having historically served this need, enter it from their own angle, and the two groups are finding it necessary to disentangle the problems which have arisen together.

After the teacher has been prepared and installed in a position it is increasingly evident that many problems remain in developing the fullest outcomes. There is a large turnover

in the employment of teachers. Few teachers of real capacity can do their best work without constant stimulation and systematic effort for improvement. The schools also suffer from holding in service many teachers who should be retired or re-educated for the new work which is being laid out for the school.

Certification System.—Vigorous criticism of the certification system has been an important discussion during the year. The certification laws and regulations differ widely and reflect the generally unsatisfactory conditions. The lack of reciprocity between States confronts institutions which are not merely local with almost impossible conditions for preparing students for meeting conditions in the different States which they serve. This condition has been accentuated by the prevailing tendency to set up regulations favoring those who secure their preparation within the State. This is a clearly undesirable situation.

It seems clear that out of the general discontent and conflict of opinion changes will be made in the preparation of teachers in the years to come. Problems mainly center around the quality of the teacher, since the actual results of school attendance are influenced more by character and personality and skill of the teacher than by any other single factor.

VOCATIONAL EDUCATION

BY L. H. DENNIS

EXECUTIVE SECRETARY, AMERICAN VOCATIONAL ASSOCIATION, INC.

GENERAL

This country is entering a new era in the development of vocational education, involving important responsibilities as well as opportunities. Careful and intelligent planning must be continued in order that local, state, and Federal funds available for this work may be used wisely and to the best advantage.

The Smith-Hughes Law was passed in 1917 by the United States Con-

gress. This act was the initial act making available Federal appropriations for the development of vocational education. In 1929 the George-Reed Law was passed, appropriating additional Federal funds for vocational education in the fields of vocational agricultural education and vocational home economics education. Appropriations under this law were authorized for a five-year period, July 1, 1929 to June 30, 1934.

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The Congress of 1934 passed another similar act, known as the George-Ellzey Act. This act contained the appropriations provided for in the George-Reed Act, and in addition made provisions for some additional Federal appropriations for vocational education in the field of trade and industrial education. The term of the George-Ellzey Act was three years, the law being operative from July 1, 1934 to June 30, 1937.

GEORGE-DEEN VOCATIONAL ACT

Because of the increased demand for adequate support for vocational education, Congress in the spring of 1936 passed the George-Deen Vocational Act, to contain the provisions of the George-Ellzey Act, and also for the purpose of authorizing additional Federal funds for vocational education in various fields of vocational education activity. President Roosevelt signed the act June 8, 1936, and the law became effective July 1, 1937, continuing in force until amended or repealed by an act of Congress.

The George-Deen Act contains several provisions not included in the George-Reed and George-Ellzey Acts. As finally approved by President Roosevelt, it includes the following features:

1. Annual authorization for an appropriation of \$12,000,000 for agricultural education, trade and industrial education, and home economics education to be divided equally between these three fields. Appropriations for agricultural education are distributed throughout the States on the basis of the farm population of the States in relation to the total farm population of the country. Appropriations for trade and industrial education are determined on the basis of non-farm population. The appropriations for home economics education are distributed on the basis of rural population.
2. Annual authorization for an appropriation of \$1,000,000 for teacher training in vocational education.

3. Annual authorization for an appropriation of \$1,200,000 for training for the distributive occupations. Authorization is included in the law for the training of teachers of classes in distributive occupations.
4. Authorization for these appropriations on a permanent basis.
5. Fifty per cent of the Federal funds may be used without matching until 1942. Beginning July 1, 1942, the States using George-Deen Funds will be required to match 60% of the Federal funds with state, local, or state and local funds combined. Beginning July 1, 1943, the States will match 70%, 80% in the year beginning July 1, 1944, 90% beginning July 1, 1945, and 100% beginning July 1, 1946.
6. A minimum allotment of \$20,000 per year for each State for each of the fields of agricultural education, trade and industrial education, and home economics education.
7. A minimum of \$10,000 per year for each State for training for the distributive occupations.
8. A minimum of \$10,000 per year for each State for vocational teacher training.
9. Training for public and other service occupations was included in the final copy of the law.
10. Appropriations may be used for salaries and necessary travel expenses of teachers, supervisors and directors.

TRAINING IN THE DISTRIBUTIVE TRADES

Section two of the George-Deen Law authorizes Federal appropriations for the development of occupational training in the distributive trades. Dr. Paul H. Nystrom, Professor of Marketing, Columbia University, is an authority in this field. In a recent address Dr. Nystrom refers to the development of vocational training in the distributive trades as it will be stimulated by the George-Deen Act: "The George-Deen Law offers substantial financial encouragement and so makes it possible for a

wide-spread establishment of vocational training in these trades."

FUTURE CRAFTSMEN OF AMERICA

One of the interesting developments of 1936 has been the organization of the Future Craftsmen of America. This is a national organization very similar to the organization of students of vocational agriculture known as the Future Farmers of America. Boys receiving shop instruction in industrial arts and vocational trade training courses have organized an association, the purpose of which is to stimulate pride in craftsmanship and the development of those ideals and standards that will make for a better citizenship and more efficient living.

This organization was a natural development on a national basis following the development of many local active clubs in the high schools and vocational schools operating under various names, but with similar activities. This caused the boys to desire cooperation between the various school clubs for the purpose of further stimulating interest in the activities in which they were mutually interested. The organization is purely an educational organization, designed to help boys having common interests to make the most of their experiences and opportunities in efforts toward self-development.

PUBLIC SERVICE TRAINING

Another educational movement of considerable magnitude is already under way in this country in connection with the training of various groups of public officials. Vocational training has already been organized in many communities and several States for such groups as firemen, policemen, assessors, inspectors of weights and measures, etc. This movement will undoubtedly be greatly expanded in the years immediately ahead. The George-Deen Law makes it possible to use Federal Vocational Funds for this very effective type of occupational training. A study of the results already achieved in this phase of occupational training show that it is possible to

reach relatively large numbers with effective training at a very low per capita cost.

AMERICA VOCATIONALLY CONSCIOUS

The public has become increasingly aware of the advantages and possibilities of a sound program of vocational training. Information has spread rapidly during the past year or two. The plight of American youth during our recent depression has made parents and educators and social leaders very keenly aware that adequate provisions must be made to assist youth in its efforts at occupational adjustment and readjustment.

Already, under the stimulus of the expected availability of Federal Vocational Appropriations under the George-Deen Law, States and communities are preparing for an extension of the existing vocational education program. One state Department of Education now has on file 500 official applications for the establishment of vocational departments. Another State during the present year has completed, or has in the process of erection, between 80 and 90 vocational school buildings. Many of these have been built as WPA projects.

Philadelphia has completed plans for two new large vocational schools. Pittsburgh has a new trade school under way. Chicago is planning for a trade school on the South Side, planned to accommodate 6,000 students, many of whom will be employed apprentices receiving instruction supplemental to their employment. Many other illustrations might be cited.

Vocational training has become very popular. There is danger that some well intentioned individuals and groups may be so carried away with the trend and strength of public sentiment as to recommend and urge some types of vocational training activity that may not be based upon a real need and that may not function as well as may be expected. Care must be taken to base all projected vocational training plans on a

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study of the actual needs in the various occupations. Furthermore, vocational training is a responsibility of the educational leadership of this country and should not be sublet to other agencies and groups dominated by other interests and influences.

ADULT EDUCATION

BY THOMAS FANSLER

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GENERAL

A review of activities for 1936 in the field of education for adults would include reports from many thousands of agencies, most of which have been carrying on extensive programs for a number of years. Mention of these agencies merely by name would fill several pages. For a complete picture of the field the reader is referred to the *Handbook of Adult Education in the United States, 1936*. Here one may learn what is being done in adult education by the public schools, by Agricultural Extension, by colleges and universities, by libraries and museums, by special schools for adults, by religious agencies, by prisons and sanatoria and settlement houses, by national agencies, and by the Federal Emergency Relief Agencies. Here one may learn what is going on in art, in music, in civic and political education, in vocational guidance and rehabilitation. Here one may learn of education for special groups, such as parents and organized workers. It is not the purpose of the writer to recount what is contained in the *Handbook* but rather to note some of the interesting new developments that have attracted attention during 1936.

PUBLIC FORUMS

Probably the most important experiment in adult education is the public forum program sponsored by the U. S. Office of Education in ten demonstration centers throughout the country. Programs were put into operation in February in three centers: Colorado Springs, Col.; Manchester, N. H., and Monongalia County, W. Va. In March, 1936

seven additional centers were named: Schenectady, N. Y.; Hamilton County, Tenn.; Pulaski County, Ark.; Minneapolis, Minn.; Sedgwick County, Kan.; Orange County, Calif.; and Portland, Ore. Programs were planned and put into operation in the fall.

The general administrative scheme in each center is the same, with local school board as sponsor and a school officer, usually the local superintendent, as project administrator. Under him is a staff consisting of forum leaders who hold regular forum meetings and a corps of qualified librarians, research assistants, and clerks, most of whom are drawn from relief rolls.

Although some variations in program building exist, the program for the area is frequently built upon a series of small neighborhood forums, visited each week by as many of the forum leaders as the size of the neighborhood audience permits, and each forum leader on a rotating schedule speaks in five or six different neighborhood centers each week. Thus each of the neighborhood centers is given an opportunity to take part in a program that is varied and extensive.¹

Checklists upon which the citizen may indicate his choice of subject-matter are mailed to the people in the community. These ballots and consultation by the director with the citizens' advisory committees organized to represent a cross section of community groups in each area are some assurance that the subjects

¹ See *A Step Forward for Adult Civic Education*, p. 8. U. S. Department of the Interior, Office of Education.

dealt with will be of vital interest to the community. The fear that the forums may be used as a device for propaganda by the Federal Government is obviated by the complete authority each local administration has in the selection of leaders and topics.

This demonstration project in civic education for adults, touching so many different types of community throughout the nation, is of great interest. It is an extension of the forum experiment in Des Moines upon a nation-wide scale. A second demonstration project is already being planned in ten other centers for the early spring of 1937, with an appropriation granted for that purpose. Commissioner Studebaker obviously wishes to embark upon a detailed demonstration over a period of two or three years, and yet it is a matter of some conjecture whether the pressures exerted on behalf of other types of educational programs for which Federal subsidies are being sought will not necessitate an appeal to Congress for funds before the demonstrations that Mr. Studebaker has in mind have been completed.

REHABILITATION OF ADULTS

Announcement was made of plans for the establishment of an Institute of Human Adjustment at the University of Michigan, to deal with, among other handicapped persons, older men and women for whom jobs are hard to find and hard to keep. Before his departure for South America, President Roosevelt made an appeal to industry to help solve the problem of employment for older persons. The combination of laboratory and clinical research under the auspices of universities, as exemplified at the Employment Stabilization Institute at the University of Minnesota, and of active cooperation on the part of business leaders should be effective in a solution of this problem.

Rehabilitation for handicapped adults is more than a matter of making beaded bags for the Christmas trade. Health officers are beginning to appreciate the therapeutic effects of educational programs. Particularly

is this so in the rehabilitation of tuberculosis patients, according to the findings of the National Tuberculosis Association in 40 sanatoria. Projects of vocational guidance and educational programs based upon vocational aptitude tests and upon medical tests for physical health have demonstrated the value of education as therapeutics. The Association has recently established experimental programs in approximately 50 sanatoria.

A community program of adult education that has medical sanction and supervision was undertaken at Saranac Lake, N. Y., in January, 1936 under the name of the Saranac Lake Study and Craft Guild. Up to Sept. 1 a total of 222 persons had enrolled, over 80 per cent of whom are tuberculous and some confined to sanatoria. The program is varied. Some students are assisted and supervised in correspondence study courses, some merely given an advisory service for their reading. Class instruction, in addition to individual instruction, is given in English and American Literature, French, German, and Spanish, chemistry, biology, history and political sciences, stenography and office practice, bookkeeping, drawing and painting. There are hobby activities as well. The purpose of the Guild is not to provide mere diversion but to assist the patient toward a full recovery of his physical and psychic health.

ADULT EDUCATION IN THE COLLEGES

Colleges and universities have been quietly expanding their influence in adult education. Institutes or schools for alumni, held usually during or immediately after commencement week and addressed by members of the faculty, were held at Chicago, Cornell, Goucher, Kansas, Lawrence, Michigan, Ohio State, Princeton, Smith, Stevens, Syracuse, Vassar, Wellesley, Wells and Wooster. While alumni education is not new and while the above list is probably incomplete, it is interesting to note that in the case of at least two of the above institutions—Cornell and Goucher—the summer program was

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the result of enthusiastic response given experimental programs undertaken for the first time in 1935.

Departments and schools of education are offering new courses in adult education in response to what seems to be a growing demand for training along professional lines. Various universities and teachers colleges have established special institutes or courses for workers in the Federal Emergency programs. An instance of this is a course for educational advisers in C.C.C. camps offered for the first time last summer by Teachers College, Columbia University.

In the field of university extension, some universities, notably the University of Florida, have been experimenting with short courses or institutes for various groups of citizens in commercial and industrial occupations. Professional and public service occupations have long been considered legitimate fields for the promotion of extension education. The University of Minnesota has begun upon a program of intensive studies designed for technicians and professional education. These studies are in units that vary in length from one week to a semester. A building to house 100 of these advanced "adult" students has been built on the campus. Another interesting departure from tradition is the Opportunity School of the University of Toledo, which school is operated in cooperation with the Federal Emergency Education Program and is now in its fifth year.

It is evident that the universities do not feel that they have reached the limits to which an institution of higher education may legitimately render useful services beyond undergraduate and professional curricula. Some attempt to define those limits may be read into the announcement of last summer by the National University Extension Association of a committee of its members for research and accreditation. Some educators are of the opinion that accreditation stifles enterprise and experimentation. However sound or unsound that opinion may be, each university extension department is al-

most sure to find legitimate necessary services within its own sphere of influence that may be difficult to justify before an accreditation agency that may be more interested in *university* than in *extension*. Conversely, *extension* of facilities might conceivably in time be so great as to render practically meaningless the term *university* as applied to educational standards.

LIBRARIES AND MUSEUMS

According to press reports a new agency in the library field, to be known as the Library Division, is being established in the U. S. Office of Education. The new division will make surveys and reports on public libraries and libraries in schools, colleges and universities and, in addition, will foster coordination of public libraries and school libraries as well as coordination of research materials among scholarly libraries, and interstate library cooperation on a nation-wide basis. The most important part of the announcement for the field of adult education is that a specific task of the new division is the coordination of library service on a nation-wide basis with other forms of adult education. Just what form this coordination will take is not yet known but one may hazard a guess that a concerted attempt will be made to make available study materials in connection with the public forums program. How the libraries are cooperating with adult education agencies is illustrated by the activities at the Central Library at Portland, Ore. where four different series of classes are being held: Extension Division classes of the Oregon State System of Higher Education; Forum Discussion Groups of the Federal Forum experiment; W.P.A. classes, both university and high-school level, and finally Vocational Education classes under the auspices of the Portland Public Schools. The library furnishes books and reading lists, and the Readers' Adviser conducts a weekly class in international affairs.

An interesting experiment in museum education, held at the Cincinnati Art Museum and financed by

the Carnegie Corporation, has completed its first year. The course is known as the Carnegie Course for Adults in Appreciation of the Arts, and is to run for two more years. Only those students completing the first year will be admitted to the second year. Although the course has a "laboratory period," the first year being devoted to the principles of art and the second year devoted to material and techniques, the course is primarily in art appreciation for the average person. In the 24 meetings half of the two-hour period was devoted to lectures, demonstrations, and discussions and half to laboratory work. Five galleries of the Museum were used to exhibit the principles of art, objects in the field of decorative arts, reference books and plates and photographs. In the laboratory were exhibited, with labels and color analyses, important paintings from the collections of the Museum and of private persons.

The students represented a remarkable cross-section of occupational endeavor. In order of numbers these occupations were as follows: housewives, school teachers, stenographers, social workers, nurses, nuns, manufacturers, advertisers, school principals, psychologists, architects, bankers, commercial artists, and librarians. The total registration was 620 and, of the 596 persons who attended the various sections of the first class meeting, 420 were attending during the last few weeks of the course. This represents a high degree of persistence.

AGRICULTURAL EXTENSION

In four rural counties of New York the Extension Service of the State Colleges of Agriculture and Home Economics are undertaking with the State Department of Education a cooperative project, the purpose of which is to help young people in rural areas better to adjust themselves to changing economic conditions. This project has in it elements similar to undertakings that have been going on in other States, notably Wisconsin, for some years, and yet the interesting part of this par-

ticular project is its emphasis upon young adults. The project aims to develop a program to meet the needs and interests of these young adults through a unification of the resources of public agencies in such fields as recreation, organized instruction, club activities, group forums and the like. Specifically the project calls for: (1) systematic vocational and technical instruction in agricultural enterprises for young men out of school on farms; (2) organized recreational activities for both sexes including basketball, volleyball, swimming, and rifle clubs; (3) social events and parties; (4) forum discussions and discussion clubs for both sexes in such fields as public affairs and economic problems; (5) special courses in auto mechanics, electricity, construction trades, home crafts, and home management and improvement.

In many States attempts have been made to equalize opportunities for vocational instruction as between urban areas and rural areas. The problem is especially acute for the young adults out of school and unemployed except as they can find something to do around the home. The problem is not a rural problem as against an urban and yet the inequality in opportunities for training serves to focus attention upon the plight of the rural population. A partial solution of the problem has been afforded by the C.C.C. camps. This is only a partial solution, however, and a concerted attack will have to be undertaken by educators in the secondary, vocational, and adult fields and by employment and guidance agencies if anything like a program representing a permanent solution to the problem is to be forthcoming.

IMMIGRANT EDUCATION AND NATURALIZATION

If there are still some 4,500,000 aliens in this country, a large proportion of whom will eventually become citizens, the task of providing some educational facilities for the foreign-born does not seem materially lessened. Some of these future citizens are highly educated and need only a

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minimum of guidance as to rules of procedure for filing applications for citizenship, while many others have before them the severe test of a wholly new language. With a continued policy of restrictions on immigration education for the foreign-born (for many years the first thing that one thought of when the term "adult education" was mentioned) should become progressively of less importance. The character of that education, however, is likely to undergo considerable modification, for an announcement has been made of a set of "basic principles" by Colonel MacCormack, United States Commissioner of Immigration and Naturalization. The education toward citizenship in this country should be less concerned with the structure of our government than with an inculcation of a love for the ideals upon which our constitution was founded. Rote learning of a few fundamental facts concerning the history of our country and civic structure may not be enough to enable an applicant for citizenship successfully to pass the new naturalization examinations. What the Immigration and Naturalization Service is after is, to quote Colonel MacCormack, "to preclude the possibility that applicants will give lip service to the American system, while retaining in their hearts a preference for other forms of government." It is problematical whether this will call for a new type of teacher of adults as well as a new type of teaching.

MOTION PICTURES AND THE RADIO

Announcement was made in May of the completion by the American Council on Education of some preliminary studies on the motion picture in education. In addition to the preparation of a complete catalogue of educational films, the Council has made a study of methods of establishing and administering programs of visual instruction in the public schools. Further developments in this field may be expected from two sources: the educational foundations and the commercial producers. Most

schools of education have courses on the use of motion pictures in elementary and secondary education, but considerable experimentation and further study of motion pictures on the level of adult education needs to be undertaken before even a demonstration project is undertaken. In this field it has been the experience of the writer that regardless of favorable attitudes on the part of the adult student group the motion picture in the hands of an inexperienced teacher has little lasting educational value. It is safe to assume that 1937 will see a noticeable increase in experimental work in the use of motion pictures with adult groups.

Techniques in education through another medium—the radio—have advanced. The Town Hall of the Air has begun its third year of broadcasting actual forum meetings and discussion from the floor. A summer term course in radio techniques was established at New York University. Students interested in preparing for jobs, especially in connection with educational broadcasting, were given a six weeks' training in a radio workshop sponsored by the University and conducted by the Educational Radio Project of the U. S. Office of Education. Special attention was given to the preparation of scripts and the techniques of production and direction.

ADULT EDUCATION SURVEYS

Three surveys, two national and one state, recently undertaken are of interest to adult education. In September President Roosevelt announced the formation of a committee to study vocational education. A study at this time is necessitated by the legislation pending in Congress concerning increased Federal subsidies for vocational education. Much of adult education is vocational in intent as well as in effect, and it is the purpose of the committee to study vocational training on all educational levels. An affirmation of present policies would sustain the present importance of adult education while a reshaping of Federal and state policies could hardly fail to in-

crease the share of the responsibility borne by adult education in the whole scheme of vocational training.

A special survey of vocational education for Negroes was begun as a project within the jurisdiction of the U. S. Office of Education. Although reports are not yet available the survey was intended to discover opportunities for vocational training open to Negroes in urban and rural areas in 33 States.

In addition to these two national surveys, mention might be made of the Inquiry into the Character and Cost of Public Education in the State of New York begun in January, 1936 by the State Board of Regents. One of the studies undertaken in connection with the inquiry is a study of adult education. So far as the writer knows, this is the first time that an attempt has been made to study the effects of adult education on a state-wide basis, most state-wide activities up to this time having been largely promotional in intent. It is a matter of special interest in this study that within the State is one of the forum demonstration centers mentioned above. The opportunity presents itself to the Regents to study this experiment at first hand.

AMERICAN ASSOCIATION FOR ADULT EDUCATION

A summary of important events in adult education would be incomplete without reference to the announcement in November concerning the American Association for Adult Education. The Association, which celebrated in May the completion of a ten-year program of stimulation and promotion of the idea of adult education, has announced a complete new policy for the coming five years. The resources of the Association are to be spent in a concerted program of study of the social effects of education for adults. A program of 40 studies, approximately eight to be published each year, has been laid out to evaluate the effects of adult education in its many aspects. The Board of the Association and the Carnegie Corporation, which is underwriting the new program, are evi-

dently of the opinion that the time has come to "take stock." These evaluation studies will undoubtedly have great effect upon the formulation of public policies with relation to adult education as an integral part of the whole program of public education in the States and in the nation.

NEW PUBLICATIONS

Adult Education, by Lyman Bryson, (American Book Company). Essentially a textbook for classes in adult education, giving a brief analysis and evaluation of the movement in the United States and treating of aims, functions, student characteristics, teaching methods, materials, and institutional organization and procedure.

Adult Education in Action, edited by Mary L. Ely, (American Association for Adult Education), presents in condensed versions about 160 articles from the *Journal of Adult Education*, 1929-1935. A readable guide to thought and progress in the field during these years and so grouped that the reader may follow needs, agencies, programs, educational media, teachers, students, methods, and general criticism.

Adult Education Bulletin. (Adult Education Section of the National Education Association). This new quarterly takes the place of the former *Inter-State Bulletin* and is devoted especially to articles on teaching techniques and procedures and news notes.

Adult-Study Catalogue, published eight times a year, October to May, (Service Bureau for Adult Education, Division of General Education, New York University), a research service intended for teachers, group leaders, and students in pamphlets, books and other teaching materials suitable for individual and group study.

American Workers' Education: Its Meaning, Methods and Policy, by Mollie Rae Carroll and Spencer Miller, Jr. (Workers' Education Bureau, New York).

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A brief pamphlet describing the significance of workers' education for the labor movement in America.

Enriched Community Living, by Marguerite Burnett and L. Thomas Hopkins (Division of Adult Education, Delaware State Department of Public Instruction). A series of studies, rich in human interest, of community and group activities in music and arts and crafts.

First Yearbook, (Pacific Northwest Association for Adult Education, Spokane, Wash.), a mimeographed summary of the proceedings of the annual meeting of the Association held in April, 1936. The central theme of the convention was "Looking Forward in Adult Education in the Northwest."

Handbook of Adult Education in the United States, 1936, edited by Dorothy Rowden, (American Association for Adult Education, New York), a handbook, mentioned earlier in the article, which is unquestionably the most valuable single reference work in the field.

A Manual of Group Discussion, by Lyman Spicer Judson, (Univ. of Illinois), a guide, prepared especially to aid in organizing and

conducting discussion meetings in rural areas, useful to all group leaders.

Men, Women, and Jobs, by Donald G. Paterson and John G. Darley, (Univ. of Minnesota Press), an account of the work accomplished during the past five years at the Employment Stabilization Institute of the University of Minnesota.

New York State Emergency Adult Education Program, (State Education Department and New York University), Series I, eight pamphlets dealing with the program in New York State. Series II, nine pamphlets, is concerned especially with the program in New York City.

Once in a Lifetime, by Ned H. Dearborn (Charles E. Merrill Company, New York), a guide for the C.C.C. camp enrollee containing concrete practical suggestions concerning vocational, recreational, and cultural opportunities in life that may be furthered by a study program in the camps.

A Step Forward for Adult Civic Education, (U. S. Office of Education, Department of the Interior), the story of the first public forum project for the civic education of adults sponsored by the Office of Education.

THE EDUCATION OF NEGROES

BY WILLIAM ANTHONY AERY

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GENERAL

The year 1936 brought to 15,000,000 American Negroes much relief in their bad educational situation. The year also brought into sharper relief some important educational problems which hitherto have been sadly overlooked, namely, the need of conserving human life; the fallacy of educating young people regardless of some vocational outlet; the severe limitations of segregation; and the inadequacy of the tax-supported public-school system to train Negroes

for a satisfying life, especially in the rural areas of the South.

Crimination and recrimination have been freely indulged in from time to time but the hope of those who are engaged in improving the education of Negroes is best expressed in what courageous, intelligent people, both white and Negro, are doing throughout the South to demonstrate what can be accomplished with the limited funds available. It is in the spirit of recording, as accurately as is humanly possible, the successful

demonstrations that this outline has been prepared. The low spots, and they are very numerous, simply indicate where new demonstrations in the efficacy of education to improve modern American Negro life need to be made as soon and as wisely as possible.

"Today, 2,500,000 Negro children," said Dr. Edwin Embree, president of the Julius Rosenwald Fund (Chicago), "are enrolled in the 17 Southern States which have segregated school systems . . . 150,000 Negroes are in 2,000 schools of secondary level. . . . The support of Negro education is still grudging and unfair. . . . The average for all the Southern States . . . is an annual expenditure on education of \$12.57 per Negro pupil as contrasted with \$44.31 per white pupil. . . . The average Negro child gets only about one-quarter as much schooling as his Southern white neighbor, only one-eighth the schooling which the Nation as a whole deems proper for its children" (*American Scholar*, May, 1936). It should be noted that there are over 900,000 Negro children of elementary-school age for whom "there are no schools or who are not in school."

WORK OF THE GENERAL EDUCATION BOARD

Without generous financial aid from philanthropic foundations the education of Negroes during 1936 would have been severely handicapped. Only those who are intimately acquainted with the needs of Negro educational and social organizations can fully appreciate the generosity and wisdom that were expressed in the work of the foundations. The General Education Board (New York), of which Dr. Trevor Arnett is president, continued, through 1936, "to stimulate and develop Negro education through public agencies and important private institutions." For the support of Negro public schools during 1936-1937, the Board made an appropriation of \$136,500. In addition it set aside \$10,000 for the state agents of Negro education and of a few other "selected persons in attending a seminar on Negro educa-

tion and race relations to be held in 1937 under the joint auspices of the University of North Carolina and Yale University."

The Board also appropriated \$10,000 "to continue the in-service training of Negro teachers in rural schools in the Southern States." It continued during the summer of 1936 "demonstrations of rural teaching of progressive character" as well as the work of adapting teaching materials to the needs of rural schools. Mississippi and Tennessee received grants for curriculum revisions in Negro schools. The Board encouraged "Negro participation in the attack upon social and economic problems . . . particularly those affecting the welfare of the group."

Through the Calhoun School (Alabama) and the Penn School (South Carolina) the Board aided rural and community work for Negroes. It also appropriated \$25,000 toward supplementing the salaries of Jeanes supervising industrial teachers in Alabama, Georgia, North Carolina, and Virginia. Duke University (Durham, N. C.) received \$3,500 "toward the support of a demonstration in Negro education and race relations." Snow Hill Normal and Industrial Institute (Snow Hill, Ala.) received \$750 "for recording a collection of authentic Negro spirituals and work songs for a limited number of educational institutions." The General Education Board continued its aid to two Negro medical colleges—Meharry (Nashville) and Howard (Washington). It also gave \$2,400 for the 1936 and 1937 post-graduate clinics for Negro physicians who come to St. Philip Hospital (Richmond, Va.).

The General Education Board, realizing the part that better teachers play in the improvement of Negro schools and colleges, awarded fellowships to 46 persons on the faculties of 25 private institutions and to 23 persons in 18 public institutions. To 71 persons it granted \$76,136 stipends for further study. In short, the Board attempted to improve Negro institutions along several lines, but emphasized the importance of im-

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proving the Negro public schools of the South and of developing Negro leadership for the complexities of American social and economic life.

JULIUS ROSENWALD FUND

Dr. Edwin R. Embree, president of the Julius Rosenwald Fund (Chicago), prepared an enlightening monograph, *Julius Rosenwald Fund: Review of Two Decades, 1917-1936*, giving information concerning the character and organization of the Fund, its financial problems, its policies, and its programs with reference to Negro school building, Negro university centers, Negro colleges (private and state), fellowships, medical and library services, general education, race relations, and rural education. He also included a list of the bulletins and reports published by the Fund as well as a list of the books written by the officers of the Fund. A study of this printed material would give a comprehensive view of the Negro and his numerous problems.

In two decades (1917-1936) the Rosenwald Fund spent \$5,165,281, more than one-third of its total expenditures in building and improving Negro school buildings in the South. "The valuation of school plant available to the Negro today throughout the South," according to Doctor Embree, "is estimated at \$37 per pupil as contrasted with \$157 per pupil for the white population." Through 1936 the Fund expended \$331,289 in the field of race relations. This sum included contributions to the Commission on Interracial Cooperation (Atlanta), fellowships for the investigation of social problems by Southern white students and professors, departments of Negro life in Southern universities, studies of race and culture in America and in other parts of the world.

Negro rural education in the South during 1936 was studied carefully, scientifically, and helpfully by many agencies. From 1917 through 1936, in addition to its contributions to the Negro school building program, the Fund spent \$60,453 for field investigations, experiments, and dem-

onstrations in Southern rural schools, both white and Negro, as well as the preparation of reading materials more directly adapted to rural needs.

Through 23 years, ending with 1936, the Rosenwald Fund, by spending over \$5,000,000, aided the South in securing for Negro rural school children 5,357 buildings (4,977 school-houses, 217 teachers' homes, and 163 shops), with a pupil capacity of 663,615, and at a total cost of \$28,408,520. From 1928 through 1936, it gave \$1,276,508 for the development of Negro university centers (Washington: Howard University and the Association for the Study of Negro Life and History; Atlanta: Morris Brown, Morehouse, Atlanta School of Social Work, Spelman, and Atlanta University; Nashville: Fisk and Meharry; and New Orleans: Dillard). To these centers there had also come over \$20,000,000 from other sources.

From 1928 through 1936, Negro Y.M.C.A. work received \$117,500 from the Fund for five additional buildings. The National Association for the Advancement of Colored People, the National Urban League, and the Boy Scouts of America were generously aided. For Negro relief and recovery the sum of \$45,882 was spent. The Fund financed conferences of white and Negro leaders on economic conditions among Negroes. One important outcome was the publication by the University of North Carolina Press of *The Collapse of Cotton Tenancy* by Charles S. Johnson, sociologist at Fisk University (Nashville).

Some of the painful limitations of Negro library service were relieved by the contribution of \$653,118. Of this amount, \$464,275 went to the support of 12 county-library demonstrations, and \$54,975 went to the building up of Negro college libraries.

In addition to his administrative duties, Doctor Embree quite wisely devoted much time and energy to writing and speaking on various phases of education for Negroes. His words, written and spoken, received wide publicity throughout the newspaper and magazine world to the distinct advantage of American

Negroes and the enlightenment of their white neighbors throughout the United States.

RURAL EDUCATION

Availability.—The crux of the education of Negroes is the problem of rural education, because there are such vast numbers of educable Negroes living in country districts and because the funds for rural schools are so pitifully small to meet the intricate problem as it really exists. Dr. Ambrose Caliver, senior specialist in the education of Negroes, U. S. Office of Education, presented in a monograph, *Availability of Education to Negroes in Rural Communities*, five important conclusions: "(1) The largest number of and most difficult problems concerned with Negroes are found in rural areas; (2) the few schools provided in rural areas are difficult of access; (3) the educational facilities are meagre in amount; (4) the education given is of poor quality; and (5) many of the factors . . . are closely associated with one another." These conclusions he supported with a wealth of concrete and official data.

Scope of the Problem.—Dr. Edward E. Redcay, research associate and special agent of the John F. Slater Fund (Washington, D. C.), declared that 67 per cent of the 9,500,000 Negroes living in the 17 Southern States are found in rural districts, while only 10 per cent of the Negroes in the North are rural. These Negroes (see *Southern Workman*, Hampton Institute, August, 1936) "came from the isolation and barren background of an agrarian way of life which, socially and economically, has been crumbling into a decadent state for the last thirty years." Doctor Redcay also stated that for Negroes, in the rural South, "are reserved the least desirable aspects of things political, economic, social, cultural, and educational." In Negro lives "such agencies as the radio, the press, the cinema, and the educative possibilities inherent in the utilization of the many devices of transportation and communication, play an almost negligible rôle."

School Conditions.—Doctor Redcay gave the following facts concerning rural elementary schools for Negroes: (1) In 17 Southern States, maintaining separate schools for the races, 17,087 are one-teacher schools, 5,232 are two-teacher schools, and approximately 700 are of the three-teacher and larger consolidated type; 78 per cent are of the one- and two-teacher types with the poorest-trained and lowest-salaried teachers, the shortest terms, the poorest attendance, the crudest buildings, the meanest equipment and teaching materials. (2) Some 17 per cent of Negro elementary pupils live three or more miles away from the schools they attempt to attend; 39 per cent live two or more miles away; less than 59 per cent are within the accepted walking range. (3) In Florida, 50,000 of the 133,000 Negro children (see *Report of the Florida Educational Survey Commission*) were not in schools. (4) Over 1,000,000 Negro children in the South do not attend school. (5) Often the one-teacher Negro school has an attendance of five to seven children on a cold, rainy day and 55 to 70 children on a warm day of sunshine. (6) More than 7,000 additional rooms would be needed to house a considerable number of the non-attending Negro children. (7) Of the 2,700,000 Negroes, between five and 20 years of age, living in the South in 1930, only 57 per cent attended some school (public or private) some time that year. (8) The average days attended in the Southern Negro schools was 100. (9) The average length of term ranged from 5.6 months in one State to 8.9 in another, with the average for the Southern Negro schools at 6.7 months.

Needs.—Dr. Leo M. Favrot, field agent of the General Education Board (see *Journal of Negro Education*, July, 1936), declared that the aims and programs of Negro rural schools had never been clearly defined and still remain "the neglected step-children of the school systems of the South." He, in turn, quoted Professor Mabel Carney's statement that "more than one-half of all of

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America's Negroes are rural; approximately one-half of the school population comes from farms; more than 90 per cent of Negro schools are of the one-, two-, and three-teacher type; and more than one-half of all Negro teachers are employed in such schools." Doctor Favrot expressed this conclusion: "The small Negro school, as conducted at present, is not generally successful in teaching the fundamental school arts and the social studies. . . . The children are not in large numbers acquiring a degree of literacy sufficient to function materially in their daily lives for their own enjoyment and for the utilization of their knowledge in the community."

ELEMENTARY EDUCATION

Alabama.—Dr. P. W. Shankweiler (see *Social Forces*, 14:410-416), who is a member of the Birmingham Southern College staff, in "Negro Education in Northern Alabama," compared the educational opportunities of white and Negro children in nine counties of Alabama (white children, 74,240 and colored children, 34,340) and presented a detailed study of Walker County in which coal mining constitutes the chief type of industry (white children, 16,857 and colored children, 1,897). The per-capita day-school outlay in nine counties, for the school year 1931-1932, follows: White, \$21.10; colored, \$9.95. For the State of Alabama the figures were: White, \$31.22; colored, \$5.88, based upon a white school population—children between the ages of 7 and 20, Census of 1932—of 527,979 and colored school population of 303,268. For three "black belt" counties the figures were: White, \$48.15, \$80.43, and \$25.38; colored, \$3.34, \$1.96, and \$2.29—for a coastal county: White, \$33.31; colored, \$5.78—for four counties with a small Negro population: White, \$20.16, \$25.22, \$17.02, and \$20.50; colored, \$2.96, \$8.90, \$8.53, and \$6.51. While Alabama has undoubtedly been improving Negro elementary schools, the findings of Doctor Shankweiler indicate some of the basic problems, not only for Northern Alabama, but

also for vast areas throughout the South.

Maryland.—A brief statement concerning Maryland's elementary schools for Negroes (see *Report on Progress in the Reduction of Over-age Pupils in Maryland County Schools*) also throws some light on the problem of overageness of Negro pupils. "In October, 1921, there were 25,296 pupils in the Maryland county colored public elementary schools, of whom 16,602, or 65.6 per cent, were over age. . . . In 1905, with an enrollment only slightly smaller, 24,504, only 6,397 colored elementary pupils, or 26.1 per cent, were over age."

North Carolina.—Even in North Carolina, where much thought, time, and money have been devoted to improving Negro elementary schools, the approximate term for Negroes in 1936 was only eight months.

SECONDARY EDUCATION

Limitations.—Doctor Redcay (see *Southern Workman* for August, 1936) presented the following facts concerning Negro secondary education in the South: (1) In 1933 there were 1,128 counties in the South, each possessing a considerable Negro secondary population (ages 15 to 19), with 119 entirely without Negro public high-school facilities; 68 with one year of secondary work; 153 with two years; 117 with three years; and 600 with four years; 255 counties had at least one fully-accredited Negro high school. (2) 411 counties were virtually without Negro secondary schools. (3) In reality the one- and two-year Negro high schools were rural one- and two-teacher rural schools "trying to expand their offerings to satisfy the growing educational demands of an under-privileged constituency." (4) The 2,003 Negro secondary schools (rural, 1,372 and urban, 631) included only 388 four-year schools in the rural districts and 419 in the urban centers, while 340 of the one-year type were in the rural districts and 62 in the urban centers. (5) "There is often a lack of sympathetic cooperation between urban centers possessing high-school facilities and the neighboring rural

areas in the same county." (6) "There are approximately 1,071,000 Negro adolescents (15 to 19 years of age) in the Southern States and only 13.7 per cent enrolled in secondary schools." (7) About 900,000 Negroes of high-school age are not enrolled in any school. His conclusion was provocative of thought: "Due to conditions which peculiarly circumscribe the physical, political, economic, social, and cultural aspects of Negro life, the environmental background of this minority group is excessively narrow, meagre, and predominately rural. . . . Very little schooling is provided in the Southern States for Negroes." He also took to task the North for its indifference to the education of Negroes.

Helpful Aspects.—The General Education Board reported that in 1936 there were 74 Negro high schools on the accredited list of the Southern Association of Colleges and Secondary Schools. These schools still face the problem of securing efficient teacher-librarians. To overcome some of this difficulty the Board appropriated \$19,000 "over a three-year period to carry forward the program of instruction for Negro teacher-librarians. It is proposed to set up four centers for Summer courses—at Hampton Institute, Fisk University, Atlanta University, and Prairie View (Texas) State Normal and Industrial College." North Carolina added 13 high schools to the accredited list and brought the total to 133. North Carolina, however, had only 9.7 per cent of the total Negro enrollment in high schools, while it had 21.1 per cent of the white. The nation's average was 19.6 per cent. North Carolina's average was 2.1 per cent below.

VOCATIONAL EDUCATION

Survey of Vocations.—In 1936 there began an important nationwide survey of the opportunities and facilities for the vocational education and guidance of Negroes in urban and rural communities, under the direction of Dr. Ambrose Caliver. The U. S. Office of Education stated: "Recent social and economic reorganization in American

life has in all probability borne more heavily upon Negroes than upon any other group in our society. Already operating on a narrow and thin occupational base, they are finding their fields of operation to be even more restricted through the technological advances and agricultural readjustments. So that, in the opinion of competent observers, they are falling farther behind in the march of progress. Among several factors contributing to this lag or retrogression, the lack of educational facilities provided for Negroes and the need of general information concerning the situation are outstanding."

Agriculture.—At Hampton Institute (Aug. 30 to Sept. 4) there was held the Regional Conference of State Supervisors and Colored Teacher Trainers (in agriculture) as well as the annual meeting of the New Farmers of America. The report was assembled by H. B. Swanson, specialist for agricultural education (teacher training). Representatives were present from 15 States and the District of Columbia and worked in 10 committees. J. A. Linke, chief of the agricultural education service, U. S. Office of Education, stated that "the primary aim of vocational education in agriculture is to train present and prospective farmers for proficiency in education." F. W. Lathrop referred to the constructive work which had been done by over 450 Negro departments in the Southern region. Dr. Oscar R. LeBeau of Hampton Institute outlined the graduate programs and the need among Negroes of graduate courses in agriculture, based upon his special study. He proposed regional schools which would offer year-round courses as well as Summer-school short courses of three weeks each.

Vocational agriculture among Negroes, according to the conference at Hampton, was going forward very successfully. A few examples follow: (1) For Alabama it was reported that 30 county training schools were conducting classes in vocational agriculture; that all-day pupils were carrying 1,087 economic projects; that 832 projects had been completed;

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that 566 evening-school pupils had been enrolled and had completed 490 projects; and that the charges for all types of projects had amounted to \$38,542, while the credits had come to \$66,946. (2) For Arkansas, 43 teachers had enabled 327 families to get on a cash basis; that 43 community fairs had been held; and that several "special" days—Achievement Day, Seed-corn Day, and Winter Cover-crop Day—had been successfully and profitably observed. (3) For Florida, there had been enrolled 1,074 New Farmers of America; that trainees had been given the opportunity of actually organizing and teaching part-time and evening classes; and that 200 boys had taken part in the campus-beautification program. (4) For Louisiana, 3,942 pupils had taken part in the programs (all-day, 1,573; part-time, 801; and evening, 1,568). (5) For Virginia, the enrollment in agricultural classes in the training schools had risen from 2,057 to 2,469; that the number of evening classes had increased from 45 to 55 (enrollment from 620 to 736); that the part-time classes had increased from 23 to 30 (enrollment from 222 to 298); that the income from products had reached \$126,499, an increase of \$40,000 over the previous year; that the average income for all-day boys had come to \$103.11; that 60 young men had enrolled in the collegiate agricultural courses in the Virginia State College; that 7 new vocational teachers had been appointed; and that a three-week summer session of instruction had been held aiming to improve technical skills, methods of farming, farm-shop practice, and farm management.

Home Economics.—Susan M. Burson, who is an agent for home-economic education, U. S. Office of Education, indicated, at the Hampton meeting, the cooperation between teachers of agriculture and home economics—planning, producing, and conserving the home food supply; planning clothing for the family; planning and using finances and other home resources; improving the home through adding conveniences; improving the community recreation

facilities; and planning family good times. The home-economics teacher-training conferences for Negroes, held during 1936, expressed interest in the value of joint meeting of agriculture and home-economics teachers in considering school, community, and teacher-training programs for enriched farm living.

ADULT EDUCATION

Health.—The problem of the conservation of Negro life cannot be neglected if any headway is to be made in the all-round and effective education of the large Negro population in the United States, particularly in the Southern region. The Virginia Department of Health, through a number of institutes for Negro midwives or doctors' helpers, sought in 1936 to conserve Negro life. In connection with several educational institutions, Mrs. Emily W. Bennett, R.N., organized institutes in which some vital topics were realistically handled through demonstrations, lectures and discussions—prenatal care; setting up a room for home delivery; infection and pregnancy; stages of labor; immediate care of mother and baby; differences between sick and well people; and nursing care in rural communities.

Religion.—The American Negroes are still deeply religious. Further, Negro ministers are important leaders and adjuncts in all phases of Negro life. It is significant that during 1936 at least two important denominations—Episcopalians and Baptists—took a very active part in reaching their ministers and constituents with a wide-range and well-developed program of adult education. The Southern Baptist Convention, for example, appointed the Rev. Noble Y. Beall (white) of Atlanta to carry on among 3,550,000 Negro Baptists an educational missionary enterprise. Mr. Beall conducted 99 conferences and institutes. He reached 1,372 Negro preachers and 8,998 individuals through institutes, training schools, and conferences in his campaign to help educate Negro ministers of the South.

Labor.—Tom Tippet, a well-

known writer and authority on the labor movement (see *Opportunity*, published by the National Urban League of New York, 14:202-204), described the progress that was being made towards better interracial cooperation, especially in the field of workers' education. "Workers' education," he said, "is not set up specifically to ameliorate the race conflict, but it does bring workers face to face with their economic problems and one of these problems of great significance is tied up with the attitude of white men and Negroes toward each other as workers." Mr. Tippet described the widespread program of the Affiliated Schools for Workers which is interracial, co-educational, and "hooked into union labor." These schools have recognized the important fact that "the advance of American industry has drawn Negroes into the manufacturing and distributing processes." They accept the fact that "members of the Negro race are seen as economic factors in a situation that weights all workers down." Mr. Tippet also pointed out the interdependence of white and Negro workers and the relation of both groups to the idea of more complete unionization through workers' education. He maintained that race prejudice must give way, when both groups discuss with intelligence and lack of emotion the economic consequences of racial hostility.

HIGHER EDUCATION

Surveys.—Professor W. C. Eels of Stanford University (see *Journal of Negro Education*, October, 1936) presented, in "Surveys of Higher Education for Negroes," the important bibliographical materials related to 61 surveys that had appeared within 25 years and that had dealt with 137 institutions for Negroes. The bibliographical citations had been compiled as part of an extensive analysis and appraisal of 300 surveys of education published in the United States. Of this number 20 per cent included some consideration of Negro institutions in 20 States and the District of Columbia. Professor

Eels' material will soon be published by the Carnegie Foundation for the Advancement of Teaching (New York). Here is evidence that higher education for Negroes is a matter of nation-wide interest and concern.

Need of Reorganization.—The July, 1936, issue of the *Journal of Negro Education*, published by the Bureau of Educational Research of Howard University (Washington, D. C.), was devoted to a major question: "Does Negro Education Need Reorganization and Redirection?" Professor Charles H. Thompson, editor of the *Journal*, said: "There are in the United States at the present time some 111 higher institutions for Negroes with approximately 26,000 students." Dr. Robert P. Daniel, president of Shaw University (Raleigh, N. C.) discussed the need of Negro college reorganization and redirection. He referred to the ten-year effort of the Negro colleges to raise standards and secure ratings by national and regional associations. He argued in favor of the use of educational facilities for the improvement of the instructional programs. He criticized the Negro colleges for not being self-critical of their standards. He made a vigorous plea for the introduction of courses which should acquaint Negro youth with race psychology, race relations, race history and literature, labor problems, and vocational occupations. Doctor Daniel said: "The success of the Negro college graduate is judged in regard to three types of measures—intracacial achievement, biracial adaptation, and interracial advancement."

Howard University.—Forty-one States and 13 foreign countries sent 1,970 students (men, 1,072, and women, 898) to Howard University and 245 were sent out from the graduate school, the college of liberal arts and six professional schools. The enrollment showed a gain of 21 per cent over the depression low of 1933-1934. The enrollment showed that 21.5 per cent were of graduate calibre. This university's service to the South was shown by the fact that 82.2 per cent of the graduate enroll-

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ment and 75 per cent of the entire enrollment came from the South. Of the 160 full-time teachers 20 per cent (32) were professors; 15 per cent (24) were associate professors; 16 per cent (27) were assistant professors; and 38 per cent (61) were in the rank of instructor or below. During 1936 Howard had 11 per cent (18) of the staff away on leave for further study. The Howard School of Medicine received from the General Education Board \$100,000 for the departments of medicine and surgery; the Freedmen's Hospital established a tuberculosis clinic, open to Howard students, by the health department of the District of Columbia; and the Gallagher Hospital extended its facilities for the study of contagious diseases. The University continued to make progress through the planned cooperative support of government funds and private philanthropy.

The outstanding needs, at the close of 1936, were: thirty mature teachers in the professorial rank; increased scholarship funds for undergraduate and graduate students; \$300,000 for the book collection; and funds for maintenance and repair of the physical plant. These were in substance the needs of all Negro colleges, universities, and professional schools.

Howard, in cooperation with the Federal Government, conducted five research projects: The economic status of college alumni; a survey of educational publications of higher institutions of learning; abstracts of masters' and doctors' theses and faculty research on professional training; a study of student mortality in institutions of higher education; and the status of the rural and semi-rural teachers of Maryland.

Atlanta University System.—The six-week session of the 1936 Atlanta University Summer School attracted 630 students (225 graduate and 405 undergraduate) from 24 States, the District of Columbia, and West Africa. There was also a two-week institute for rural teachers and a short course in scoutmastership. The four-week interdenominational

Ministers' Institute enrolled 37 pastors and other religious workers. In the colleges and schools, which make up the Atlanta University system, 1,309 students enrolled in September, 1936, and included 131 carrying graduate work. Miss Florence M. Read is the acting president. In September, Morehouse College (Atlanta) opened with 433 men from 27 States and the District of Columbia. This represented an increase of 21 per cent. Medicine was the first choice in profession for 137 freshmen and for second choice 37 named teaching. Spelman College, for women, opened with an enrollment of 302—freshmen, 110; sophomores, 78; juniors, 60; and seniors, 54—who came from 119 cities and towns (Georgia cities and towns, 41; Alabama, 12; and Florida, 8).

Fisk University.—Under the efficient leadership of President Thomas E. Jones, Fisk University undertook a campaign to raise \$3,000,000. Toward this sum the General Education Board appropriated \$1,500,000 and it also renewed its annual appropriation of \$75,000 for current expenses in addition to \$3,000 for some Summer-School demonstration in teaching methods.

Dillard University.—Dr. William Stuart Nelson, a well-known Negro scholar and former president of Shaw University, assumed office as president of Dillard University (New Orleans) on July 15, 1936, succeeding Dr. Will W. Alexander, a distinguished white Southerner, who for many years had been identified with interracial cooperation and goodwill. Dillard "is devoted to ideals and principles of Christian conduct and service." It is a liberal-arts institution which "proposes to teach the great accomplishments of western civilization in science, literature, the arts, economics, and politics; to emphasize the contribution which has been made by Negroes; and to consider the problems of Negroes in contemporary American society." It is designed for those who wish to learn and to lead with wisdom and understanding.

Teacher-Training.—Since the

teacher is so largely the heart and brain of the average Negro school, North Carolina, like other Southern States, has been trying to raise the professional standards of its teachers. During the summer of 1936 about 7,136 Negro teachers went to school (first session, 3,636 and second, 2,500). The average training of 6,500 Negro teachers in North Carolina was brought up to two and three-fourths years of college. The salaries were increased 20 per cent over the previous year. The state indices of training follow (750 equals four years of high school and three and one-half years of college): White, 741.5 (rural, 730.1 and city, 776.5); Negro, 640.2 (rural, 610.8 and city, 718.9).

Junior Colleges.—While junior colleges have flourished among whites—there were 441, according to U. S. Office of Education *Bulletin*, No. 3 for 1936—there were only 22 for Negro students with an enrollment of 2,050 (men, 663, and women, 1,387) out of a total of 102,477. The Negro junior colleges graduate slightly over 500 annually.

SOCIAL EDUCATION

Health.—According to a U. S. Census press release on Dec. 28, 1936, out of every 1,000 Negroes born alive, 87.32 as compared with 62.32 white die in the first year of life; second year, Negro rate 16.57 and white, 9.93; eleventh year, Negro rate 2.11 and white 1.47; and forty-fifth year, Negro rate 21.81 and white, 8.74. Negroes who reach the age of 21 years have an expectation of age of 35.26, and whites, 41.16 years. From 1928 through 1936, the Rosenwald Fund generously supported a Negro health program. It gave \$857,507. Of this amount, \$97,332 went to public-health nurses; \$74,820 to tuberculosis studies and demonstrations of control measures; and \$72,883 to syphilis control demonstrations in six Southern States. Large sums were also given for Negro hospitals and nurse-training in Chicago, Philadelphia, Baltimore, Savannah, Richmond, Spartanburg, Hampton (Virginia), and other places. Sixteen

widely distributed hospitals and clinics were helped in their programs to improve Negro health.

Morals.—The Virginia Industrial School (for Negro girls), founded by Mrs. Janie Porter Barrett and supported to a considerable extent by clubs of Negro women, observed its twenty-first birthday on May 21, 1936. Thomas C. Walker, a well-known Negro lawyer-farmer, in his address stressed the importance of interracial cooperation and goodwill in the establishment of this school for Negro girls who otherwise would not have had a chance to overcome the disadvantages of their environment. "Mrs. Barrett," he said, "wanted to have a simple demonstration of a temple for disadvantaged lives and of education which would enable girls to take care of themselves and others." In his judgment 10,000 Negro girls in Virginia need the help that Mrs. Barrett and her associates are giving a relatively few at the Virginia Industrial School which is now a part of the Virginia Department of Welfare. Addresses were also made by Dr. R. E. Blackwell, president of Randolph-Macon College and R. R. Gwathney of Richmond—two distinguished white Virginians in the presence of a large delegation from the State Federation of Colored Women's Clubs.

RACE RELATIONS

The Seventeenth State-wide Conference of the North Carolina Committee on Interracial Cooperation was held on April 23, 1936, at Winston-Salem, and dealt with "The Quest for More Abundant Life." Group conferences considered important topics; for example, "Negro Workers in Industry and Agriculture"; "Educational Emphasis and Guidance"; "Health and Welfare Needs"; "The Church in a Program of Human Betterment"; "Family Life and the Standard of Living"; "The North Carolina Farmer"; and "Interracial Cooperation."

The North Carolina division of cooperation in education and race relations (N. C. Newbold, director)

THE EDUCATION OF NEGROES

and the state department of public instruction, together with Duke University and the University of North Carolina, held a conference in December, 1936, on the training of Negroes for professional service in agriculture, home economics, vocational education, health, library service, law, religion, and social welfare. The conference discussed the available data concerning the present status of the Negro as to training in various professional and other fields of work, as well as the estimated needs of persons and types, quality and amount of training in various fields of Negro life. It discussed the unmet needs and possibilities of Negroes in the area south of Washington, east of Blue Ridge, and north of Atlanta. It also considered the types of professional instruction that have been proposed; namely, (1) a state university system, (2) the consolidation of some Negro colleges, and (3) professional education of Negroes in one or more state universities, or government fellowships for Negroes who undertake graduate or professional study outside of their home States.

NATIONAL SURVEY OF VOCATIONAL GUIDANCE

The Survey of Vocational Guidance for Negroes gave employment to 479 persons on relief and brought together very valuable information. "Two-thirds of the Negro population of the Nation," according to the *March of Education* (Washington, D. C.), "are included in the 192 urban and rural communities, in 33 States and the District of Columbia, participating in the Survey."

THE NEGRO AND THE N. Y. A.

From the initiation of the National Youth Administration in June, 1935, Negroes have had a share in the administration and supervision of the program. During 1936 the Division of Negro Affairs was directed by Mrs. Mary McLeod Bethune, founder and president of Bethune-Cookman College (Daytona, Fla.), assisted by Dr. Frank Horne, acting principal of the

Fort Valley (Georgia) Normal and Industrial Institute. There were also Negro state administrative assistants in Alabama, Florida, Georgia, Illinois, Indiana, Kentucky, Maryland, New Jersey, New York and New York City, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Virginia, and the District of Columbia. There were, too, Negro supervisors of project units throughout the country. Twenty-one States and the District of Columbia had Negro members on State Advisory Committees. In short, there was rather full participation of Negro youth in the benefits of the N. Y. A. program, which included student work aid (26,000 students), youth work projects (20,000 students), camps for unemployed women (400 trainees), vocational guidance with placement and apprenticeship training and leisure-time activities. The program brought direct economic benefit to 50,000 Negro young men and women.

Virginia Negroes, according to the field secretary of the Negro Organization Society, J. A. Oliver, received during 1936 some 25 per cent of the \$40,625 National Youth Administration appropriation for student aid which assisted 620 boys and girls to remain in school. About one-fifth of these Negroes came from the urban centers and the remainder were aided through rural schools. The N. Y. A. projects were under Negro supervisors or foremen and were conducted in conjunction with the home-demonstrations and Jeanes teachers who supervise school and industrial work. They included the following types of work: compiling survey data, assisting in the preparation of warm lunches for school children, beautifying school grounds, repairing school furniture, renovating textbooks, developing playgrounds, thinning and cutting timber, and preparing nursery beds on model forest projects.

LEGISLATION

The legislature of Virginia passed the Stephens-Dovell bill which provides tuition for graduate and pro-

fessional education to Negroes who are denied admission to State-supported institutions. Under the new Virginia law Negro applicants to whom admission is denied have the right to claim the difference between what it would cost them individually to attend a Virginia institution and the cost to them in any out-of-state school. The expenses to be compared include tuition charges, living expenses, and cost of transportation.

SUMMARY

Race leaders themselves indicated some important elements in a constructive program for the education of American Negroes. *School and Society*, in the issue of March 26, 1936, printed in full the recommendations of the presidents of the 17 Negro land-grant colleges in which the following points were stressed: (1) Negro students should be given "practical programs for raising the wage level" of their group and thereby improve its economic stability; (2) "there is grave need of a national survey of occupational opportunities for Negroes"; (3) Negroes should be taught how to hold their present jobs and prepare themselves for new ones; (4) Negroes should be taught economics in terms of life situations and should be given a clear insight into unionism; (5) Negroes should be taught the fundamentals of citizenship; (6) Negroes should be taught what Federal services can do for them; (7) Negroes should become familiar with what farming can do to help them rise to higher levels of living; (8) Negro institutions

should be treated fairly through tax-gathered funds; (9) land-grant colleges need contact men with the industrial world; (10) state-wide committees of laymen could help make the colleges better understood and more useful; (11) curriculum evaluation should be always available; (12) education in America should be considered a state function; (13) Negroes should have "representation on governing boards which have to do with their civic, educational, social, and spiritual life"; (14) philanthropic support is still needed for all Negro educational institutions; (15) stranded Negro boys and girls need help badly; (16) the National Youth Commission can help Negroes at many turns; (17) graduate and professional training are needed for gifted Negroes; and (18) the creative abilities of Negro scholars should have some outlet in worthwhile research.

White and Negro leaders in education were in general agreement, during 1936, that to the education of Negroes there should be applied the techniques of teaching and administration, the gifts of financial and moral support, and the social and economic objectives that had been applied successfully in improving the educational status of whites at several levels and in numerous geographic areas. They were in agreement, too, that comprehensive planning, a scientific approach to education, nationwide cooperation, and new educational patterns would help to improve the education of American Negroes.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

AMERICAN ASSN. FOR ADULT EDUCATION, 60 E. 42nd St., New York City.
AMERICAN COUNCIL ON EDUCATION, 744 Jackson Place, Washington, D. C.
AMERICAN COUNCIL OF LEARNED SOCIETIES, 907 15th St., Washington, D. C.
AMERICAN FEDERATION OF TEACHERS, 219 Fifteenth St., Toledo, O.
GENERAL EDUCATION BOARD, 49 W. 49th Street, New York City.
BUREAU OF EDUCATIONAL REFERENCE AND RESEARCH, University of Michigan, Ann Arbor, Mich.
NATIONAL CONGRESS OF PARENTS AND TEACHERS, 1201 16th St., N. W., Washington, D. C.
NATIONAL COUNCIL OF EDUCATION, Teachers College, Columbia University, New York City.
NATIONAL EDUCATION ASSN. OF THE U. S. A., 1201 16th St., N. W., Washington, D. C.
NATIONAL RESEARCH COUNCIL, DIVISION OF EDUCATIONAL RELATIONS, 2101 Constitution Ave., Washington, D. C.
NATIONAL SOCIETY FOR THE STUDY OF EDUCATION, University of Minnesota, Minneapolis, Minn.
PUBLIC EDUCATION ASSN., 745 Fifth Ave., New York City.

INTERNATIONAL

INSTITUTE OF INTERNATIONAL EDUCATION, 2 W. 45th St., New York City.
INTERNATIONAL COUNCIL FOR THE EDUCATION OF EXCEPTIONAL CHILDREN, 3 East 25th St., Baltimore, Md.
INTERNATIONAL COUNCIL OF RELIGIOUS EDUCATION, 100 E. 42nd St., New York City.
PAN-AMERICAN EDUCATIONAL CONGRESS, Universidad de Chile, Cosilla 2543, Santiago, Chile.

TEACHERS

AMERICAN FEDERATION OF TEACHERS, 219 Fifteenth St., Toledo, O.
CARNEGIE FOUNDATION FOR THE AD-

VANCEMENT OF TEACHING, 522 Fifth Avenue, New York City.
EDUCATORS ASSN., 307 Fifth Ave., New York City.
NATIONAL STUDENT FEDERATION OF AMERICA, 8 West 40th St., New York City.
STUDENTS COOPERATIVE SOCIETY, 14 Contes Slip, New York City.
TEACHERS UNION, 114 East 16th St., New York City.

SCHOOLS

AMERICAN SCHOOL CITIZENSHIP LEAGUE, 295 Commonwealth Ave., Boston, Mass.
CHILD STUDY ASSN. OF AMERICA, INC., 221 W. 57th St., New York City.
NATIONAL ASSN. OF HIGH SCHOOL SUPERVISORS AND INSPECTORS, State Department of Education, Columbus, O.
NATIONAL ASSN. OF SECONDARY SCHOOL PRINCIPALS, 5835 Kimbark Ave., Chicago, Ill.
NATIONAL KINDERGARTEN ASSN., 8 West 40th St., New York City.
Y. M. C. A. EDUCATIONAL SECRETARIES ASSN., 55 Hanson Place, Brooklyn, New York City.

COLLEGES AND UNIVERSITIES

AMERICAN ASSN. OF COLLEGIATE REGISTRARS, George Peabody College for Teachers, Nashville, Tenn.
AMERICAN ASSN. OF JUNIOR COLLEGES, Little Rock Junior College, Little Rock, Ark.
AMERICAN ASSN. OF UNIVERSITY PROFESSORS, 744 Jackson Place, Washington, D. C.
AMERICAN ASSN. OF UNIVERSITY WOMEN, 1634 I St., N. W., Washington, D. C.
ASSOCIATION OF AMERICAN COLLEGES, 19 West 44th St., New York City.
ASSOCIATION OF AMERICAN UNIVERSITIES, Yale University, New Haven, Conn.
ASSOCIATION OF COLLEGES FOR NEGRO YOUTH, Fisk University, Nashville, Tenn.
ASSOCIATION OF LAND GRANT COL-

XXVII. EDUCATION

LEGES AND UNIVERSITIES, University of Kentucky, Lexington, Ky.

COLLEGE ENTRANCE EXAMINATION BOARD, 431 W. 117th St., New York City.

NATIONAL ASSN. OF STATE UNIVERSITIES, Miami University, Oxford, O.

NATIONAL UNIVERSITY EXTENSION ASSN., Bloomington, Ind.

NEW ENGLAND ASSN. OF COLLEGES AND SECONDARY SCHOOLS, Tufts College, Medford, Mass.

PHI BETA KAPPA, 145 W. 55th St., New York City.

PROFESSIONAL EDUCATION

AMERICAN ASSN. OF TEACHERS COLLEGES, State Normal School, Oneonta, New York.

AMERICAN MEDICAL ASSN., Council on Medical Education and Hospitals, 535 N. Dearborn St., Chicago, Ill.

ASSOCIATION OF AMERICAN LAW SCHOOLS, Tulane University, New Orleans, La.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, 5 S. Wabash Ave., Chicago, Ill.

SECTION OF LEGAL EDUCATION, AMERICAN BAR ASSN., 1140 N. Dearborn St., Chicago, Ill.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION, University of Pittsburgh, Pittsburgh, Pa.

SPECIAL EDUCATION

AMERICAN ASSN. TO PROMOTE TEACHING OF SPEECH TO THE DEAF, School for the Deaf, Staunton, Va.

AMERICAN CHILD HEALTH ASSN., 50 West 50th St., New York City.

AMERICAN HUMANE EDUCATION SOCIETY, 180 Longwood Ave., Boston, Mass.

AMERICAN PHYSICAL EDUCATION ASSN., 311 Maynard St., Ann Arbor, Mich.

NATIONAL ASSN. OF THE DEAF, 3633 East Tremont Ave., New York City.

VOCATIONAL

AMERICAN ASSN. FOR THE ADVANCEMENT OF AGRICULTURAL TEACHING, Iowa State College, Ames, Ia.

AMERICAN HOME ECONOMICS ASSN., Mills Building, Washington, D. C.

AMERICAN VOCATIONAL ASSOCIATION, 1010 Vermont Ave., Washington, D. C.

NATIONAL VOCATIONAL GUIDANCE ASSN., 25 Lawrence Hall, Harvard University, Cambridge, Mass.

WORKERS EDUCATION BUREAU OF AMERICA, Machinists Building, Washington, D. C.

NOTE: for additional educational societies consult U. S. OFFICE OF EDUCATION, Washington, D. C.

NECROLOGY .

NECROLOGY

(From *The New York Times*, January 1, 1937)

- AARONS, ALFRED E., theatrical manager, 71, Nov. 16.
- ADAMS, LESLIE, actor, 49, March 26.
- ALEXANDER, Judge JOSHUA W., Secretary of Commerce in Wilson administration, 84, Feb. 27.
- ALLEN, Governor OSCAR K., Louisiana, political heir of Huey P. Long, 55, Jan. 28.
- ALLENBY OF MEGIDDO, Lord, Field Marshal, conqueror of Turkey, 75, May 14.
- ANDERSON, RASMUS BJORN, historian of Norse peoples, 90, March 2.
- ANDREWS, MARY SHIPMAN, novelist, Aug. 2.
- ANDREWS, WILLIAM SHANKLAND, New York jurist, 77, Aug. 5.
- ASCHE OSCAR, author, actor, 65, March 22.
- BAINVILLE, JACQUES, French journalist, Academician, 57, Feb. 9.
- BALIEFF, NIKITA, Russian impresario, director of Chauve-Souris, 59, Sept. 3.
- BARANY, Professor ROBERT, won 1914 Nobel Prize for medicine, 60, April 8.
- BARNES, Colonel JAMES, novelist, historian, 69, April 30.
- BEATTY, DAVID, First Earl, Baron of the North Sea and Brooksby, commanded First Battle Cruiser Squadron at Jutland, 65, March 10.
- BECK, JAMES M., constitutional lawyer, 74, April 12.
- BERWIND, EDWARD JULIUS, coal operator, 88, Aug. 19.
- BICKERTON, JOSEPH P., Jr., theatrical lawyer and producer, 58, Aug. 20.
- BIDDLE, Major Gen. JOHN, ex-head of West Point, Spanish War veteran, 75, Jan. 18.
- BINET, HENRI Cardinal, Archbishop of Besançon, 67, July 15.
- BLASHFIELD, EDWIN, artist, 87, Oct. 12.
- BLERIOT, LOUIS, first to fly the English Channel (July 29, 1909), 64, Aug. 2.
- BRANNAN, Dr. JOHN WINTERS, ex-president board of trustees Bellevue and Allied Hospitals, 83, Aug. 30; his widow, EUNICE DANA BRANNAN, suffrage leader, 82, Nov. 14.
- BREEZE, EDMUND, actor, 64, April 6.
- BRETT, GEORGE PLATT, New York publisher, head of The Macmillan Company, 77, Sept. 19.
- BRISBANE, ARTHUR, popular philosopher and publicist, served the Hearst readers 39 years, 72, Dec. 25.
- BRITTEN, Captain Sir EDGAR, first commander of the *Queen Mary*, 62, Oct. 28.
- BROOKS, Dr. HARLOW, diagnostician, 65, April 13.
- BROSSEAU, ALFRED J., president Mack Truck Corporation, Sept. 24.
- BROWN, BOLTON, artist, lithographer, 71, Sept. 15.
- BROWN-POTTER, Mrs. CORA URQUHART, actress, 76, Feb. 12.
- BUELOW, BERNHARD WILHELM VON, German diplomat, 51, June 21.
- BURESCH, Dr. KARL, twice Chancellor of Austria, 58, Sept. 16.
- BURKAN, NATHAN, popular actors' and politicians' lawyer, 56, June 6.
- BURKE, the Right Rev. Mgr. JOHN J., Catholic Welfare prelate, 61, Oct. 30.
- BURT, Bishop WILLIAM, former head of Methodist Episcopal Church in Europe, 83, April 9.
- BUTT, Dame CLARA, contralto, 62, Jan. 23.
- BYRNS, JOSEPH W., Speaker of the House of Representatives, 67, June 4.
- CADMAN, the Rev. Dr. S. PARKES, Brooklyn preacher, 71, July 12.
- CALDWELL, ANNE, librettist, 60, Oct. 22.
- CAMP, CHARLES WADSWORTH, author, 57, Oct. 31.
- CARLISLE, ALEXANDRA, actress, 50, April 22.

NECROLOGY

- CHAPIN, ROY D., Secretary of Commerce in the Hoover Administration, 56, Feb. 16.
- CHERON, Senator HENRI, French statesman, 69, April 14.
- CHESTERTON, GILBERT K., man-of-letters, 62, June 14.
- CLEMENTEL, ETIENNE, Finance Minister of Herriot Cabinet (1924-25), 72, Dec. 26.
- COCHRAN, THOMAS, partner in J. P. Morgan & Co., 65, Oct. 29.
- COLE, WILLIAM HORACE DEVERE, British perpetrator of immortal jokes, 53, Feb. 28.
- COLEY, Dr. WILLIAM BRADLEY, authority on cancer, 74, April 16.
- COLLINGE, CANNON, composer, conductor, 61, Jan. 16.
- CONSTANTINI, Count DAVIDO, Italian scientist and diplomat, 60, Jan. 10.
- COOLIDGE, CHARLES ALLERTON, Boston architect, 77, April 1.
- COOLIDGE, JOHN GARDNER, Boston diplomat, 72, Feb. 28.
- COUZENS, JAMES, U. S. Senator, Michigan, Republican politician, 64, Oct. 22.
- CURTIS, CHARLES, vice president in the Hoover Administration, 76, Feb. 8.
- CUTTEN, ARTHUR W., grain speculator, 66, June 24.
- DARLING, CHARLES JOHN, First Baron, jurist, wit, 86, May 29.
- DELEDDA, GRAZIA, Sardinian author, Nobel Prize winner (1926), 60, Aug. 16.
- DERN, GEORGE H., Secretary of War, 63, Aug. 27.
- DIAZ, Dr. PASCUAL BARRETO, Archbishop of Mexico, 59, May 19.
- DODSWORTH, JOHN WILLIAM, ex-editor *Journal of Commerce*, 79, June 30.
- DRAYTON, GRACE G., illustrator, created "comic strip," 58, Jan. 31.
- DUEL, Dr. ARTHUR B., ear surgeon, 66, April 11.
- DUNN, Colonel BEVERLEY WYLY, ordnance expert invented "dunnite," 75, May 11.
- DUNNE, FINLEY PETER, creator of "Mr. Dooley," 68, April 24.
- EHRICH, WALTER LOUIS, art expert, 57, Feb. 2.
- ELLSWORTH, WILLIAM WEBSTER, former president of the Century Company, 81, Dec. 18.
- ENNIS, GEORGE PEARSE, painter, 52, Aug. 28.
- ESTIENNE, General BAPTISTE, inventor of French tank, 75, April 3.
- FALKENHAUSEN, General LUDWIG VON, German Governor General of Belgium during occupation in World War, 91, May 4.
- FARRARI-FONTANA, EDOARDO, Wagnerian tenor, 58, July 4.
- FELAND, Major Gen. LOGAN, of the U. S. marines, in two wars, 67, July 17.
- FENWICK, IRENE, actress, wife of Lionel Barrymore, 49, Dec. 24.
- FESS, SIMEON DAVIDSON, "Old Guard" Republican leader in Ohio, former Senator, 75, Dec. 23.
- FOWKE, Lieut. Gen. Sir GEORGE, A. G. of B. E. F. in France, World War, 71, Feb. 8.
- FRASER, Sir JOHN FOSTER, journalist, traveler, 67, June 7.
- FRENCH, FRED F., real estate promoter, 52, Aug. 30.
- FRENCH, JOSEPH LEWIS, novelist, 78, Dec. 13.
- FUAD, King of Egypt, 68, April 28.
- GABRILOWITSCH, OSSIP, director Detroit Symphony Orchestra, 58, Sept 14.
- GARDINER, GEORGE H., New York lawyer, 67, Nov. 10.
- GARNER, JOHN ANSON, banker, lawyer, 82, Oct. 23.
- GEORGE V, King of England, 70, Jan. 20.
- GEORGE, WILLIAM R., founder of the George Junior Republic, 69, April 25.
- GERMAN, Sir EDWARD, composer, 74, Nov. 11.
- GILBERT, JOHN, motion picture star, 38, Jan. 9.
- GILDER, JOSEPH B., former editor of *The New York Times Book Review*, co-editor of *The Critic*, brother of Jeannette and Richard Watson Gilder, 78, Dec. 10.
- GOEMBOES, Marshal JULIUS, Premier of Hungary, 50, Oct. 6.
- GOLDMARK, RUBIN, composer, 63, March 7.
- GOOKIN, FREDERICK WILLIAM, banker, Orientalist, 82 Jan. 17.

NECROLOGY

- GORKY, MAXIM, Russian novelist, 68, June 18.
- GOTTHEIL, Dr. RICHARD JAMES HORATIO, Professor of Semitic Languages, Columbia U., 73, May 22.
- GRAHAM, ERNEST ROBERT, architect, 68, Nov. 22.
- GRAHAM, Captain HARRY, English playwright, 61, Oct. 30.
- GRATEAU, FRANCOIS HENRI MARCEL, invented Marcel wave in 1872, 87, June 2.
- GRAVES, ABBOTT, painter, 77, July 15.
- GREEN, Colonel E. H. R., son of Hetty Green, 67, June 8.
- GREET, Sir PHILIP BEN, actor-producer, 78, May 17.
- GRIFFITH, WILLIAM, poet, editor, 70, April 1.
- GUCHKOFF, ALEXANDER IVANOVICH, president of last Czarist Duma, 74, Feb. 14.
- HADJE, MOHAMMED JAMALUL KIRAM, Sultan of Sulu, 73, June 3.
- HALL, Dr. EDWARD HAGAMAN, author, lecturer, conservator of historical sites, 77, May 4.
- HALL, HOLWORTHY (Harold Everett Porter), novelist, 48, June 20.
- HALL, the Rev. Dr. THOMAS CUMING, ethical theologian, 77, May 27.
- HAMMOND, JOHN HAYS, mining expert, 81, June 8.
- HAMMOND, PERCY, dramatic critic of *The Herald Tribune*, 63, April 25.
- HANNA, MATTHEW E., diplomat, veteran of two wars, 63, Feb. 19.
- HAPSBURG, Archduke FREDERICK, commanded Austro-Hungarian armies in World War, 80, Dec. 30.
- HARMATI, SANDOR, violinist, composer, organizer, 43, April 4.
- HARRADEN, BEATRICE, wrote *Ships That Pass in the Night*, 72, May 5.
- HARTMAN, GUSTAVE, jurist, founder Israel Orphan Asylum, 56, Nov. 12.
- HEGEMANN, WERNER, city planner, 55, April 12.
- HEGGIE, O. P., actor, 59, Feb. 7.
- HIRSCH, HEINRICH RHEINHOLD, editor of *New Yorker Staats-Herald*, 68, March 15.
- HOLLOWAY, Dr. THOMAS BEAVER, internationally known eye doctor, 64, Aug. 18.
- HOLMES, Sir CHARLES JOHN, English landscapist and critic, 68, Dec. 7.
- HORLICK, WILLIAM, president of malted milk corporation, 90, Sept. 25.
- HOUSMAN, A. E., author of *A Shropshire Lad*, 77, May 1.
- HOUSTON, FANNY LUCY, Lady, publicist, proprietor of *The Saturday Review*, Dec. 30.
- HOWE, Colonel LOUIS McHENRY, secretary to President Roosevelt, 65, April 18.
- HOWELL, CLARK, editor-publisher *The Atlanta Constitution*, 73, Nov. 14.
- HYLAN, JOHN F., former Mayor of New York, 68, Jan. 12.
- INSELBUCH, Rabbi ELIAS, Jewish organizer, 70, July 6.
- IRVINE, WILLIAM HENRY, landscapist, 67, Aug. 21.
- JOHNSON, MAGNUS, ex-Senator, Minn., 65, Sept. 13.
- JOHNSTON, MARY, wrote *To Have and to Hold*, 65, May 9.
- JORDAN, Dr. EDWIN OAKES, bacteriologist, 70, Sept. 2.
- KAMENEFF, LEV BOROSOVICH, brother-in-law of Trotsky, 53, executed, Aug. 24.
- KARPINSKY, ALEXANDER PETROVICH, president Soviet Academy of Science, 89, July 15.
- KIERAN, Dr. JAMES M., president emeritus, Hunter College, 72, April 25.
- KING, WILLIS LARIMER, "dean of steel industry," 85, Dec. 11.
- KIPLING, RUDYARD, poet, novelist, 70, Jan. 18.
- KLAW, MARC, theatrical producer, 78, June 15.
- KOEPCHEN, the Rev. WILLIAM, New York Lutheran, 72, Sept. 8.
- LASTEYRIE, Count CHARLES DE, French statesman, 59, June 28.
- LE BOUTILLIER, GEORGE, former New York merchant, 85, Feb. 20.

NECROLOGY

- LEHMAN, ARTHUR, New York banker, 63, May 16.
- LIDDELL, Dr. MARK H., Shakespearean authority of Purdue U., 70, July 28.
- LLOYD, the Very Rev. ARTHUR SELDEN, senior Suffragan Bishop of N. Y., 79, July 22.
- LLOYD, JOHN URI, plant scientist, 86, April 9.
- LOW, WILLIAM GILMAN, dean of Columbia U. alumni, lawyer, 92, June 28.
- LYTTON, Sir HENRY, veteran Savoyard actor, 69, Aug. 15.
- McALEXANDER, Major Gen. ULYSSES GRANT, won fame at Second Marne, 72, Sept. 18.
- McBAIN, Professor HOWARD LEE, dean Graduate Faculty, Columbia U., 55, May 7.
- McCARTHY, JUSTIN, wrote *If I Were King*, 75, March 21.
- McCORMICK, CYRUS HALL, harvester machinery head, benefactor, 77, June 2.
- MacDONALD, Dr. ARTHUR, psychologist, 79, Jan. 17.
- McFARLAND (PACKEY), PATRICK FRANCIS, boxer and oil man, 47, Sept. 23.
- MACKENZIE, JEAN KENYON, African missionary, author, 62, Sept. 2.
- McKIM, The Right Rev. JOHN, Episcopal Bishop of North Tokyo, 83, April 4.
- MacLEAN, Sir FITZROY DONALD, chief of clan, 101, Nov. 22.
- McLOUGHLIN, Dr. FREDERICK O. X., Professor Civil Engineering C. C. N. Y., 48, June 29.
- MACMILLAN, Sir FREDERICK ORRIDGE, British publisher, 84, June 1.
- MACMILLAN, GEORGE AUGUSTINE, British publisher, 80, March 3.
- McMILLAN, Dr. DANIEL W., big-game hunter, 67, Aug. 4.
- McNEIL, Captain S. G. S., once commanded *Mauretania*, 64, May 7.
- MAINZER, ROBERT HENRY, banker-fireman, 61, Aug. 6.
- MAITLAND, J. A. FULLER, music critic, 79, March 30.
- MARCO, CATERINA, prima donna, 83, Feb. 2.
- MARGOLIES, Rabbi MOSES S., dean of orthodox American rabbis, 85, Aug. 25.
- MASON, Dr. JAMES TATE, president American Medical Association, 54, June 20.
- MAURIN, LOUIS-JOSEPH CARDINAL, Archbishop of Lyons, Primate of France, 77, Nov. 15.
- MAXIM, HIRAM PERCY, inventor of "silencer," son of Sir Hiram, 66, Feb. 17.
- MEIGHAN, THOMAS, actor, 57, July 8.
- MEILLET, Professor ANTOINE, French philologist, 70, Sept. 22.
- MELTZER, CHARLES HENRY, librettist, dramatist, critic, 83, Jan. 14.
- MERCE, ANTONIA (LA ARGENTINA), dancer, 35, July 18.
- MERWIN, SAMUEL, novelist, 62, Oct. 17.
- METCALF, VICTOR H., in Cabinet of President Theodore Roosevelt, 82, Feb. 20.
- METZ, THEODORE A., composer of "A Hot Time in the Old Town Tonight," 87, Jan. 12.
- MICHAELIS, Dr. GEORG, German Imperial Chancellor, 1917, 78, July 24.
- MILLER, MARILYN, actress, 37, April 7.
- MITCHELL, Brig. Gen. WILLIAM LENDRUM, commanded U. S. Air Force in France in World War, 65, Feb. 19.
- MONROE, HARRIET, poet, 75, Sept. 26.
- MOON, Dr. PARKER THOMAS, Professor Int. Relations, Columbia U., 44, June 11.
- MOREHEAD, the Rev. Dr. JOHN ALFRED, president Lutheran World Convention, 69, June 1.
- MORISON, Sir THEODORE, director British Institute of Paris, 72, Feb. 14.
- MORSE, Mrs. LUCY GIBBONS, novelist, illustrator, 96, July 13.
- MORTIMER, FREDERICK CRAIG, for forty years wrote "Topics of the Times" for *The New York Times*, 78, Jan. 27.
- MULL, J. HARRY, Philadelphia shipbuilder, 72, July 27.

NECROLOGY

- MUNSON, FRANK C., head of Munson S. S. Line, 60, Sept. 24.
- MUZIO, CLAUDIA, soprano, 44, May 24.
- NIEUWLAND, the Rev. Dr. JULIUS A., of Notre Dame U., discoverer synthetic rubber formula, 58, June 11.
- NORWARD, CARLISLE, retired New York lawyer, 90, Nov. 19.
- OBERHOLTZER, Dr. ELLIS PAXTON, historian, foreign correspondent, 68, Dec. 8.
- OGDEN, HENRY A., illustrator, authority on uniforms, 79, June 16.
- ORCUTT, BENJAMIN SINCLAIR, financial writer, successively on staffs of *The Tribune* and *The New York Times*, 69, Sept. 1.
- OSBORNE, CHARLES W., thirty years secretary to Russell Sage, 97, Dec. 1.
- OVINGTON, EARLE L., the first P. O. pilot, 56, July 21.
- PALMER, A. MITCHELL, Attorney General in Wilson Administration, 64, May 11.
- PATOU, JEAN, Parisian fashion designer, 49, March 7.
- PATTEN, WILLIAM, writer, illustrator, 70, July 27.
- PAVLOV, IVAN, physiologist, 86, Feb. 27.
- PEABODY, FRANCIS GREENWOOD, theologian and former Dean of Harvard Divinity School, 89, Dec. 28.
- PENDLETON, ELLEN FITZ, former president of Wellesley College, 71, July 26.
- PENNELL, Mrs. ELIZABETH ROBINS, widow of etcher, biographer of Whistler, 81, Feb. 8.
- PEW, MARLEN EDWIN, recent editor of *Editor and Publisher*, 58, Oct. 15.
- PHILIPP, ADOLF, playwright, 72, July 30.
- PIRANDELLO, LUIGI, Italian playwright, 69, Dec. 10.
- PLIMPTON, GEORGE ARTHUR, publisher, collector, 80, July 1.
- PUGSLEY, CORNELIUS AMORY, banker-philanthropist, 86, Sept. 10.
- QUINN, Sir PATRICK, former head of S. B. and C. I. D. of Scotland Yard, 80, June 9.
- RABINOVITCH, SAMUEL, head of United Jewish Aid Societies for 23 years, 55, Jan. 23.
- RAPETTI, JOHN, sculptor, 74, June 22.
- REEVE, ARTHUR B., created fictional detective type, 55, Aug. 9.
- REGNIER, HENRI DE, French poet, novelist, 71, May 23.
- RENO, MILO, farmers' leader, 70, May 5.
- RESPIGHI, OTTORINO, Italian composer, 56, April 18.
- RICHARDS, Prof. CHARLES RUSSELL, educator, former head of Cooper Union, 70, Feb. 21.
- RINGLING, JOHN, circus organizer, 70, Dec. 3.
- RITCHIE, ALBERT CABELL, four times Governor of Maryland, 59, Feb. 24.
- ROBINSON, JAMES HARVEY, historian, 72, Feb. 16.
- ROSALSKY, Judge OTTO A., dean of General Sessions bench, 62, May 11.
- ROOSEVELT, HENRY, Assistant Secretary of Navy, 56, Feb. 22.
- ROSSETER, JOHN H., war head of U. S. Shipping Board, 66, April 28.
- ROTHAFEL, SAMUEL LIONEL, "Roxy," 53, Jan. 13.
- ROTHSCHILD, Dr. MARCUS ADOLPHUS, president N. Y. County Medical Society, 48, Feb. 16.
- RUBINOW, Dr. ISAAC MAX, international sec. B'nai B'rith, social security expert, 61, Sept. 1.
- RUSSELL, ANNIE, actress, 73, Jan. 16.
- SACKVILLE, VICTORIA, Lady, widow of third baron; daughter of second baron, Lionel Sackville-West, diplomat, 73, Jan. 30.
- SAKLATVALA, SHAPURJI, first Communist to sit in British Parliament, 61, Jan. 16.
- SALE, CHARLES (Chic), comedian, 51, Nov. 7.
- SALENGRO, ROGER, French Minister of Interior, 52, Nov. 18.
- SCARR, JAMES H., U. S. New York "weather man" for 27 years, 69, Feb. 14.
- SCHUMANN-HEINK, ERNESTINE, singer, 75, Nov. 17.

NECROLOGY

- SCHUSTER, Sir FELIX, London banker, 82, May 14.
- SCOTTI, ANTONIO, baritone, 70, Feb. 26.
- SEAMAN, Sir OWEN, editor of *Punch* 1906-32, 74, Feb. 2.
- SEECKT, Col. Gen. HANS VON, creator of German National Militia, 70, Dec. 27.
- SHERRILL, General CHARLES HITCHCOCK, diplomat, sportsman, biographer, 69, June 25.
- SIMONDS, FRANK H., editor, war historian, 57, Jan. 23.
- SIMS, Admiral WILLIAM SOWDEN, head of U. S. N. forces, European waters, World War, 77, Sept. 28.
- SMITH, FRED B., chairman, Executive Committee, American Section, World Alliance for International Friendship through the Churches, 70, Sept. 4.
- SNAITH, JOHN COLLIS, British author, 74, Dec. 9.
- SPENGLER, OSWALD, German philosopher of pessimism, 56, May 8.
- STAING, GEORGE, racquet champion, 68, April 5.
- STEFFENS, LINCOLN, author, lecturer, original "muckraker," 70, Aug. 19.
- STIMSON, the Rev. Dr. HENRY A., founder of Manhattan Congregational Church, 93, July 18.
- STONEHAM, CHARLES A., president N. Y. Giants National League Baseball Club, 59, Jan. 6.
- STRANSKY, JOSEF, orchestra conductor and art collector, 61, March 7.
- STRAUS, JESSE ISIDOR, merchant, philanthropist, late Ambassador at Paris, 64, Oct. 4.
- SUPERVIA, CONCHITA, Spanish prima donna, 37, March 30.
- SWENSON, MAGNUS, scientist, 81, March 29.
- TAFT, LORADO, sculptor, 76, Oct. 30.
- TCHITCHERIN, GEORGI VASILIEVITCH, ex Soviet Foreign Minister, 65, July 7.
- TERRELL, Dr. GLANVILLE, professor at U. of Kentucky, 76, Oct. 4.
- TERRY, CHARLES SANFORD, Scotch historian, musician, 72, Nov. 5.
- TEWFIK, PASHA AHMED, last Turkish Grand Vizier, 91, Oct. 7.
- THALBERG, IRVING GRANT, film producer, 37, Sept. 14.
- THAYER, HARRY BATES, former president of A. T. and T. Co. and the Western Electric, 78, Sept. 3.
- THAYER, Dr. WALTER N., Jr., N. Y. State Commissioner of Correction, 60, Jan. 6.
- THIRKIELD, the Right Rev. Dr. WILBUR PATTERSON, Methodist Bishop and educator, 82, Nov. 7.
- THOMAS, EDWIN ROSS, automobile pioneer, 85, Sept. 13.
- THURSTON, HOWARD, magician, 66, April 13.
- TIERNEY, JOHN, former Supreme Court justice, 75, Feb. 20.
- TIPPLE, The Rev. Dr. EZRA SQUIER, president emeritus Drew University, 75, Oct. 17.
- TROUBETZKOY, Prince PIERRE, portrait painter, husband of Amélie Rives, 72, Aug. 25.
- TYLER, ODETTE (Mrs. BESSIE SHEPHERD), former actress, 67, Dec. 8.
- UCHIDA, Count YASUYA, ex-Foreign Minister of Japan, 71, March 12.
- VAN SWERINGEN, ORIS P., railroad builder, 57, Nov. 23.
- VAN VORST, MARIE (Mrs. GAETANO CAGIATI), author, 69, Dec. 16.
- VAN WYCK, FREDERICK, antiquarian, author of *Recollections of an Old New Yorker*, 82, Feb. 17.
- VENIZELOS, ELEUTHERIOS, Greek statesman, 71, March 18.
- WALLING, WILLIAM ENGLISH, millionaire social reformer, 59, Sept. 12.
- WALSH, The Most Rev. JAMES ANTHONY, Catholic Bishop, 69, April 14.
- WALTHALL, HENRY B., actor, 58, June 17.
- WARREN, CHARLES BEECHER, former American Ambassador to Japan and Mexico, 65, Feb. 3.
- WEED, CLIVE, cartoonist, 52, Dec. 27.

NECROLOGY

- WEIGEL, Major Gen. WILLIAM (U. S. A., retired), veteran of two wars and Indian wars, 72, March 4.
- WEISSMAN, RUBEN, "grand old man" of New York's Yiddish theatre, 81, Feb. 24.
- WELLCOME, Sir HENRY SOLOMON, American-born benefactor of British medical research, 82, July 25.
- WERNER, Dr. KARL AUGUST, prosecutor Reichstag fire trial, 60, Oct. 12.
- WESTON, Dr. EDWARD, electrical inventor, 86, Aug. 20.
- WHIFFEN, Mrs. THOMAS, actress, 91, Nov. 26.
- WHITE, Senator RICHARD SMEATON, proprietor of *The Montreal Gazette*, 71, Dec. 17.
- WHITING, ARTHUR, composer, organist, 65, July 20.
- WHITNEY, HARRY, big game hunter, explorer, 62, May 20.
- WICKERSHAM, GEORGE W., Attorney General under President Taft, 77, Jan. 25.
- WIERNIK, PETER, editor of *The Jewish Morning Journal*, 71, Feb. 13.
- WILLIAMS, Rear Admiral CHARLES SUMNER, veteran of two wars, 79, Sept. 4.
- WILLIAMS, Dr. FRANKWOOD E., psychiatrist, 53, Sept. 24.
- WILLIAMS, HERB, comedian, 52, Oct. 1.
- WILMER, Dr. WILLIAM HOLLAND, oculist, 73, March 12.
- WISTING, OSCAR, explorer, lieutenant of Amundsen, 65, Dec. 4.
- WUPPERMAN, Mrs. JOSEPHINE WRIGHT, head of Angostura Corporation, 84, Sept. 17.
- ZAHAROFF, Sir BASIL, armament salesman, 86, Nov. 27.
- ZAIMIS, ALEXANDER, former president of Greece, 81, Sept. 15.
- ZINOVIEFF, GREGORY EVSEYEVICH, former adviser to Lenin, 53, executed, Aug. 24.

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